



Service Manual

Nakamichi

TA-3

TA-3A

TA-3E

TA-30

High Definition Tuner Amplifier




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1. GENERAL

1.1. CAUTIONS/WARNINGS

(1) Product Safety Notice

Parts marked with the symbol  in the schematic diagram have critical characteristics.

Use ONLY replacement parts recommended by the manufacturer.

It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedures.

(2) Leakage Current Check/Resistance Check

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamp, or if the resistance from chassis to either

side of the power cord is less than 240 k ohms, the unit is defective.

WARNING — DO NOT return the unit to the customer until the problem is located and corrected.

(3) Lithium Battery Caution

Use ONLY replacement parts recommended by the manufacturer. Replacement must be done only by qualified service personnel because of risk for explosion.

WARNING

Litiumbatteri. Explosionsfara vid felaktig hantering. Byte får endast ske av sakkunnig personal enligt servicedokumentationens anvisningar.

ADVARSEL!

Lithiumbatterier. Eksplosionsfare. Udskiftning må kun foretages af en sagkyndig og som beskrevet i servicemanualen.

batterierne kun må udskiftes med batterier af samme fabrikat og type.

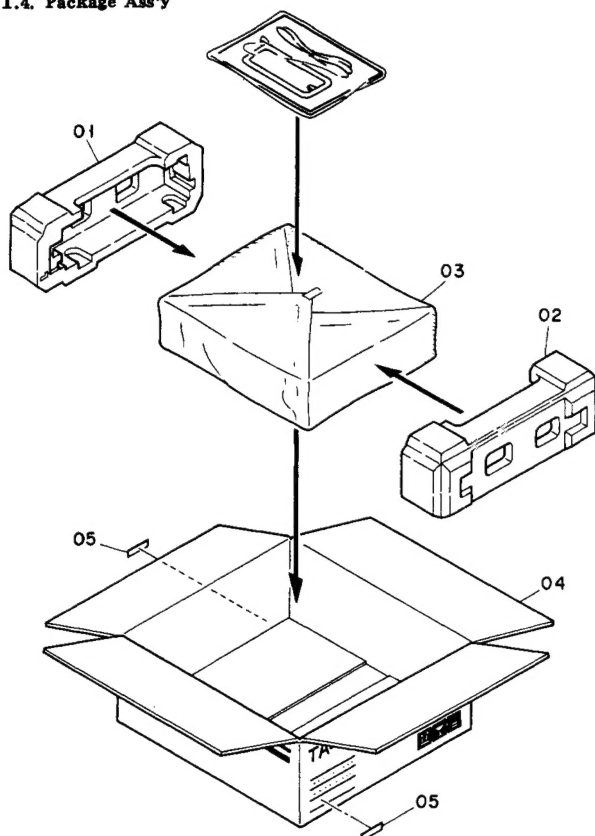
1.4. Package Ass'y

Fig. 1.1

1.2. Destination

TA-3: Other & Australia
TA-3A: U.S.A. & Canada
TA-3E: Europe
TA-30: Japan

1.3. Voltage Selector

Voltage selector is installed on the rear panel for Other version of the TA-3.

This voltage selector can select 110, 120, 220, or 240 V at customer's disposal.

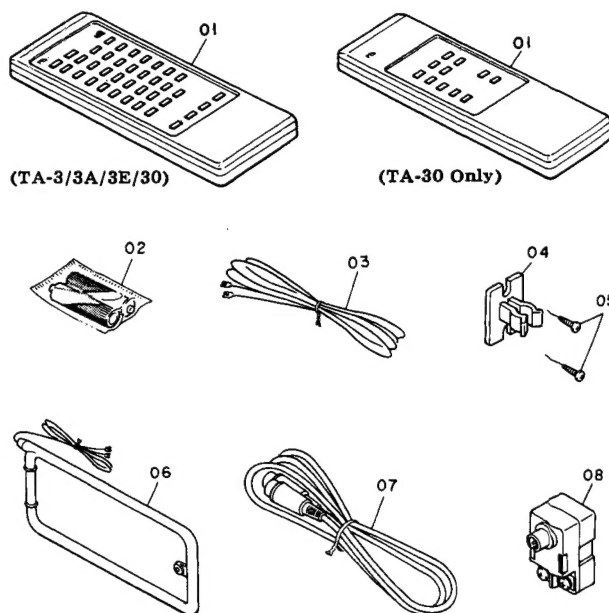
1.5. Accessory Ass'y

Fig. 1.2

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
		Package Ass'y				Accessory Ass'y	
01	OF04141B	Packing L (TA-3/3E/30)	1	01	DA04196A	Remote Control Unit	1
	OF04195A	Packing L (TA-3A)	1		DA04208A	Remote Control Unit (TA-30)	1
02	OF04042B	Packing R (TA-3/3E/30)	1	02	0B90242A	Battery AA Type x 2 (TA-3/3E)	1
	OF04196A	Packing R (TA-3A)	1		0B90341A	Battery AA Type x 2 (TA-3A)	1
03	OF03670A	Poly Sheet (TA-3/3E/30)	1		0B90276A	Battery UM 3x2 (TA-30)	2
	OF04199A	Soft Sheet (TA-3A)	1	03	0B90320A	Feeder Antenna	1
04	OF04193A	Carton Box (TA-3)	1	04	0B90319A	Loop Antenna Holder	1
	OF04191A	Carton Box (TA-3A)	1	05	0E03496A	Screw 3.1x10 @ BLK (For Wood)	2
	OF04194A	Carton Box (TA-3E)	1	06	0B90318A	AM Loop Antenna	1
	OF04192A	Carton Box (TA-30)	1	07	0B83465A	8P DIN Cable	1
05	OM05280A	Serial No. Label (TA-3/3E/30)	1	08	0B90194A	Antenna Adapter F (TA-3/3A/30)	1
	OM05247A	Serial No. Label (TA-3A)	2		0B90208A	Antenna Adapter EP (TA-3E)	1
—	OF04218A	Rear Spacer Packing (TA-3/3E/30)	1	—	0D04810A	Important Notice	1
—	OM03457A	Voltage Label 240V (TA-3 (Australia))	2	—	0D04836C	Warranty Card (TA-3A)	1
				—	0D04872D	Owner's Manual (English/German/French)	1
				—	0D04875A	Owner's Manual (Japanese)	1
				—	0D04212A	Poly Bag for Knob (TA-3/3E/30)	1
				—	0D03092B	Poly Bag for Accessory 320x340x0.08 (TA-3/3E/30)	1
				—	0D04903A	Poly Bag for Accessory 6x10 (TA-3A)	1
				—	0D04902A	Poly Bag for Set 22x40 (TA-3A)	1
				—	0J05916A	Speaker Terminal Bush (TA-3E)	1

2. REMOVAL PROCEDURES

2.1. Top Cover Ass'y and Bottom Cover Ass'y

Refer to Fig. 2.1.

- (1) Loosen screws F01 (5 pcs.) and remove F02 (Top Cover Ass'y).
- (2) Loosen screws F03 (10 pcs.) and remove F04 (Bottom Cover Ass'y).
- (3) Loosen screws F05 (2 pcs.) and remove legs (F06) as required.

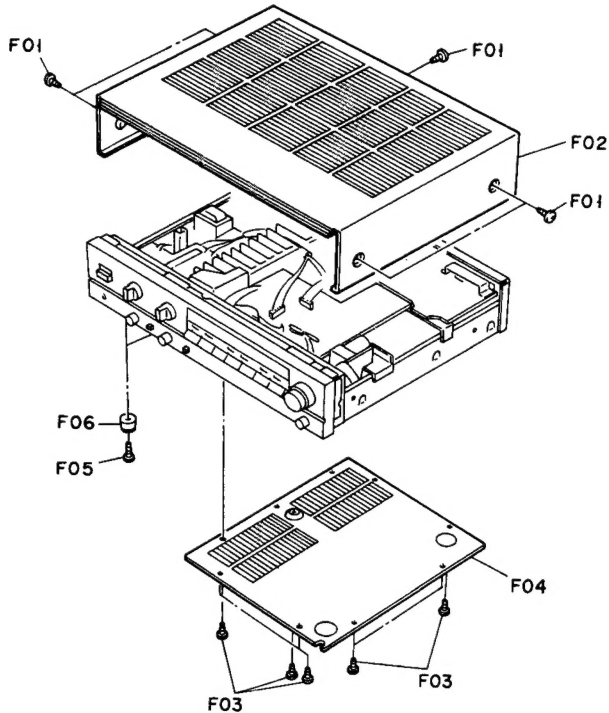


Fig. 2.1

2.2. Front Panel

Refer to Fig. 2.2.

- (1) Remove the Top Cover Ass'y and Bottom Cover Ass'y referring to item 2.1.
- (2) Loosen screws F01 (3 pcs.), F02 (2 pcs.) and F03 (3 pcs.), and remove F04 (Front Panel).

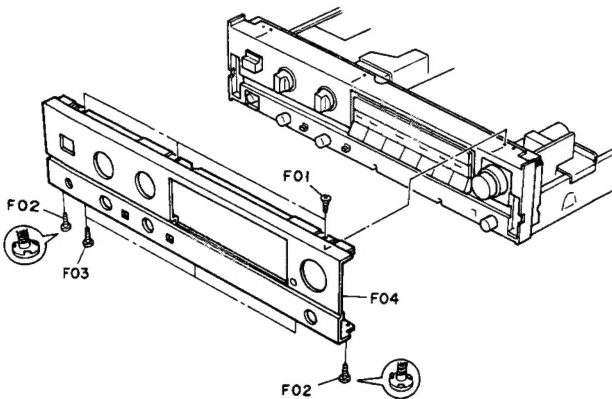


Fig. 2.2

2.3. Power Switch P.C.B. Ass'y

Refer to Figs. 2.3.1 and 2.3.2.

- (1) Remove the Top Cover Ass'y referring to item 2.1.
- (2) Pull out a knob F01, loosen a nut F02, and remove a washer F03.
- (3) Loosen screws F04 (2 pcs.) and remove a button F05. To remove F05, push the Power Switch rearward as shown in Fig. 2.3.2.
- (4) Remove F06 (Power Switch P.C.B. Ass'y).

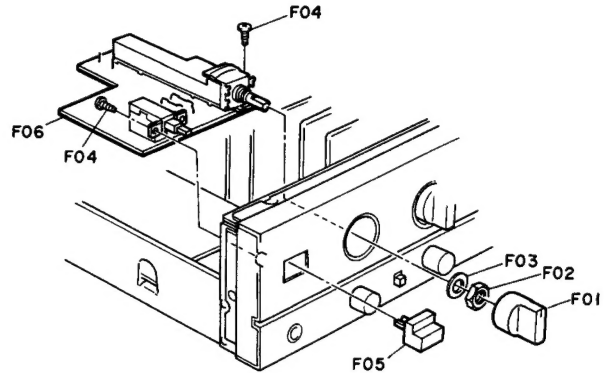


Fig. 2.3.1

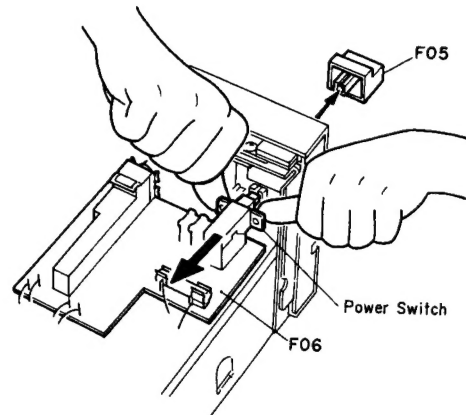


Fig. 2.3.2

Main P.C.B.

Front-end

IFT (T.H.D. <3.0%, minimum)

VR301 Lch Idling Current

TP7

TP8

CN-32

VR105

VR102

Signal Meter (FM)

Muting Level

TP2 TP1

Center Voltage (0V \pm 20mV)

T.H.D. (min.)

Tracking & IF at 600KHz (max.)

T104 T105

L102

T102

T101

TP5 GND

TP6 AM VT

VC101

Tracking & IF at 1400KHz (max.)

Signal Meter (AM)

VR101

T103

Tuning Level at 520KHz (1V \pm 0.02V)

VR103 Stereo Separation

VR104 Stereo Separation (TA-3(Other)Only)

VR302 Rch Idling Current

TP9

TP10

4

4. ELECTRICAL ADJUSTMENTS

4.1. Power Amplifier Section

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
1	Idling Current	None	DC Voltmeter between TP7 & 8 (or CN32-2 & 3) and TP7 & CN32-1 on Main P.C.B.	Monitor Selector - CD Output Level - Min. Speaker Selector - OFF	Main P.C.B. VR301 VR302	<ol style="list-style-type: none"> 1. Insert shorting plugs into the CD Player Input Jacks. 2. Turn ON the power and allow 3 minutes before adjustment. (Top Cover must be installed in this period of time.) 3. Adjust VR301 (VR302) to obtain $25 \text{ mV} \pm 5 \text{ mV}$ on the DC voltmeter.

4.2. Tuner Section

Note: Adjustment should be made in a shielded room in principle.

4.2.1. FM Tuner Section

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
1	Preliminary Step	See Fig. 4.1	Tuner Amplifier Monitor Selector - Tuner Band Selector - FM Rec.out Selector - Tuner Signal Generator Freq. - 98 MHz - 83 MHz (Japan) RF Level - 65 dBf Modulation - See REMARKS		<ol style="list-style-type: none"> 1. Set the Tuner Amplifier as indicated in the MODE. 2. Adjustment and confirmation should be made after tuning in to the set carrier frequency of the Signal Generator. <p>Note: Contents of modulation</p> <ol style="list-style-type: none"> 1. For U.S.A., Canada, Other (Wide) & Japan <ul style="list-style-type: none"> o Stereo Audio: 1 kHz, 91% Pilot: 19 kHz, 9% o Mono Audio: 1 kHz, 100% 2. For Australia, Europe & Other (Narrow) <ul style="list-style-type: none"> o Stereo Audio: 1 kHz, 51% Pilot: 19 kHz, 9% o Mono Audio: 1 kHz, 60%
2	Usable Sensitivity Adjustment	Distortion Meter to Tape 1 Record Output Jacks	Tuner Amplifier Same as above Signal Generator Freq. - 98 MHz - 83 MHz (Japan) RF Level - 13.5 dBf Modulation - Mono	Main P.C.B. Front-end IFT	<ol style="list-style-type: none"> 1. Set the Tuner Amplifier to Manual mode by pressing the Tuning Mode button. 2. Adjust the IFT to obtain minimum distortion (total harmonic distortion (THD): 3% or less). 3. Set the frequency of the Signal Generator to 90 MHz/106 MHz and check that the THD is 3% or less.
3	Center Voltage and THD Adjustment	DC Voltmeter between TP1 & TP2 on Main P.C.B. and Distortion Meter to Tape 1 Record Output Jacks	Tuner Amplifier Same as above Signal Generator Freq. - 98 MHz - 83 MHz (Japan) RF Level - 65 dBf Modulation - Mono	Main P.C.B. T104 T105	<ol style="list-style-type: none"> 1. Set the Tuner Amplifier to Manual mode. 2. Adjust T104 so that the reading on the DC voltmeter is $0 \text{ V} \pm 20 \text{ mV}$. 3. Adjust T105 to obtain minimum distortion (THD: 0.05% or less). Repeat 2 and 3, if necessary.

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
4	Muting Level Adjustment	Oscilloscope to Tape 1 Record Output Jacks	Tuner Amplifier Same as above Signal Generator Freq. - 98 MHz - 83 MHz (Japan) RF Level - 30 dBf Modulation - Stereo	Main P.C.B. VR102	1. Set the Tuner Amplifier to Auto mode. 2. Rotate VR102 fully counterclockwise. Then, return it clockwise gradually until a waveform appears on the oscilloscope. 3. Decrease the RF level of the Signal Generator until the waveform on the oscilloscope disappears. Then increase the RF level gradually until a waveform appears again. At this point, check that the RF level of the Signal Generator is 30 dBf ± 6 dB.
5	Signal Strength Meter Level Adjustment	None	Tuner Amplifier Same as above Signal Generator Freq. - 98 MHz - 83 MHz (Japan) RF Level - 56 dBf Modulation - Stereo	Main P.C.B. VR105	1. Set the Tuner Amplifier to Auto mode. 2. Adjust VR105 so that all segments (1 - 5) of the signal strength meter light up. 3. Decrease the RF level of the Signal Generator to distinguish the segment 5. Next, increase it gradually so that the segment 5 starts illuminating. At this point, check that the RF level of the Signal Generator is 57 dBf ± 4 dB.
6	Stereo Separation Adjustment	AC Voltmeter to Tape 1 Record Output Jacks	Tuner Amplifier Same as above Signal Generator Freq. - 98 MHz - 83 MHz (Japan) RF Level - 65 dBf Modulation - L or R only	Main P.C.B. VR103 IF Band Switch P.C.B. VR104 (Other only)	For U.S.A., Canada, Europe & Australia versions: 1. Set the Tuner Amplifier to Auto mode. 2. Apply modulation to only L channel. 3. Adjust VR103 to obtain minimum reading on the AC voltmeter at the R channel output jack. 4. Apply modulation to only R channel. 5. Check that the reading on the AC voltmeter at the L channel output jack is within ± 1 dB with respect to the reading in 3. If not, repeat 2 through 4. For Other version: 1. Set the switches on the rear panel as follows: Freq. Step FM/AM - 100 kHz/10 kHz IF Band - Wide 2. Apply the same procedures as above. 3. Set the switches as follows: Freq. step FM/AM - 50 kHz/9 kHz IF Band - Narrow 4. Apply the same procedures as mentioned above. Adjust VR104 instead of VR103.

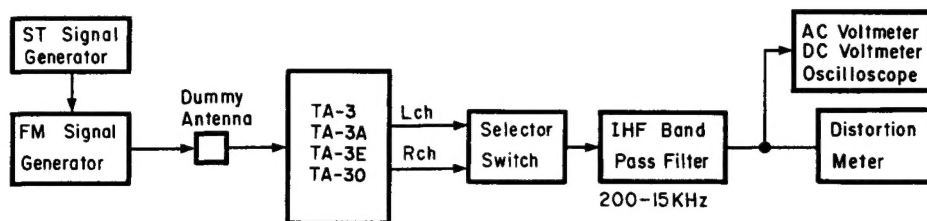


Fig. 4.1 FM Measuring Connection

4.2.2. AM Tuner Section

Note: Frequencies for Australia, Europe & Other (Narrow) are indicated in parentheses.

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
1	Tuning Level Adjustment	DC Voltmeter between TP6 and TP5 (GND) on Main P.C.B.	Tuner Amplifier Monitor Selector - Tuner Band Selector - AM Rec.out Selector - Tuner Signal Generator Freq. - 520 (522) kHz/ 1710 (1611) kHz Modulation - 400 Hz 30%	Main P.C.B. T103	1. Set the frequency of the Signal Generator to 520 kHz (522 kHz) and make tuning. 2. Adjust T103 to obtain 1 V \pm 0.02 V on the DC voltmeter. 3. Change the frequency to 1710 kHz (1611 kHz) and make tuning. Check whether the DC voltmeter reads 7.5 V to 8 V.
2	Tracking and IF Adjustment	AC Voltmeter to Tape 1 Record Output Jacks	Tuner Amplifier Same as above Signal Generator Freq. - 600 (603) kHz/ 1400 (1404) kHz RF Level - 82 dBp Modulation - 400 Hz 30%	Main P.C.B. T101 T102 L102 VC101	1. Set the measurement instruments as shown in Fig. 4.2. Set the distance between the AM Loop Antenna of the TA-3/3A/3E/30 and a test loop to 60 cm. To obtain 56 dBp/m at the AM Loop Antenna, set the RF level output of the AM Signal Generator to 82 dBp as loss is 26 dB in this setting. 2. Set the frequency of the Signal Generator to 600 kHz (603 kHz) and make tuning. 3. Adjust T101 to obtain maximum reading on the AC voltmeter. 4. Adjust T102 to obtain maximum reading on the AC voltmeter. 5. Adjust L102 to obtain maximum reading on the AC voltmeter. 6. Set the frequency to 1400 kHz (1404 kHz) and make tuning. 7. Adjust VC101 to obtain maximum reading on the AC voltmeter. 8. Repeat 2 through 7 once.
3	Signal Strength Meter Level Adjustment	None	Tuner Amplifier Same as above Signal Generator Freq. - 1000 (999) kHz RF Level - 106 dBp Modulation - 400 Hz 30%	Main P.C.B. VR101	1. With the same setting as in Step 2, set the RF level output of the AM Signal Generator to 106 dBp in order to obtain 80 dBp/m at the AM Loop Antenna. 2. Adjust VR101 so that the segment 5 of the signal strength meter starts illuminating. Note: Before adjustment, select AM mode and wait for more than three minutes.

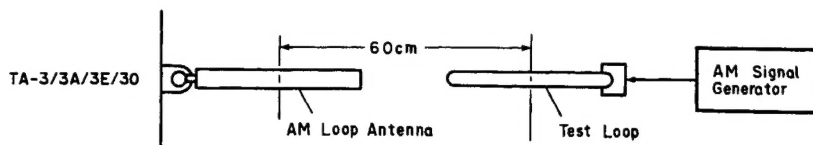


Fig. 4.2

5. MECHANISM ASS'Y AND PARTS LIST

5.1. Synthesis

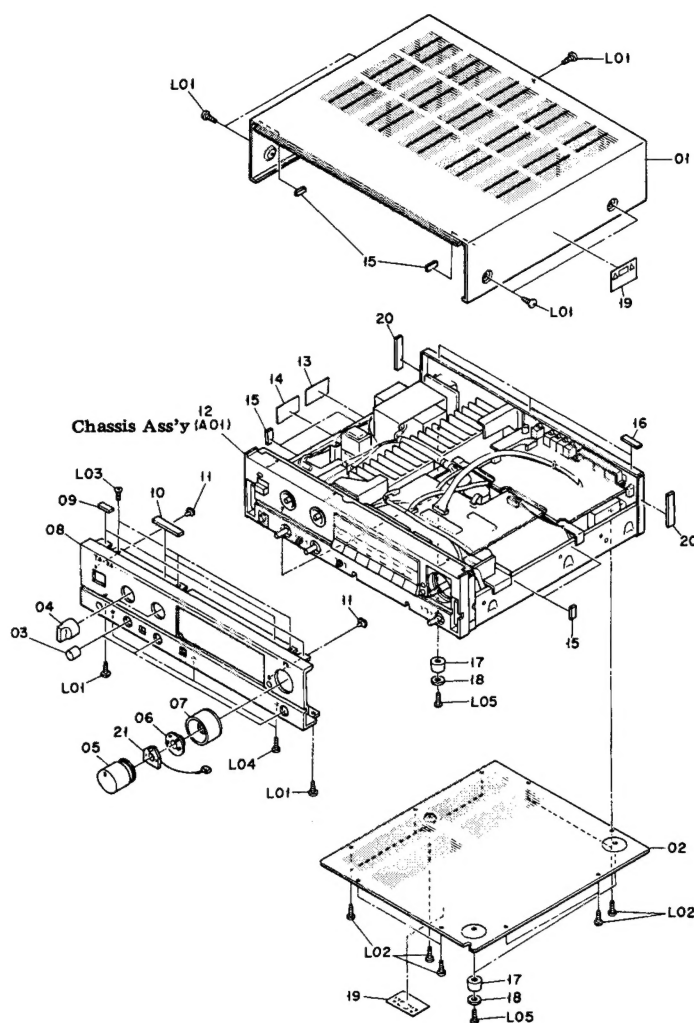


Fig. 5.1

Schematic Ref. No.	Part No.	Description	Qty	Schematic Ref. No.	Part No.	Description	Qty
5.1. Synthesis				17	0J05420A	Leg N (TA-3/3A/3E)	4
01	OH05520A	Top Cover (TA-3/3E/30)	1	18	OH05182A	Leg Ring (TA-30)	4
	OH05429A	Top Cover (TA-3A)	1		OH05183A	Leg (TA-30)	4
	0J05727A	Bottom Cover	1		0J05461A	Leg Felt N (TA-3/3A/3E)	4
	HA05540A	Tone Knob Ass'y	3		0J05428A	Leg Felt (TA-30)	4
	HA05539A	Selector Knob Ass'y	2	19	OM04377B	Caution Label (TA-3A)	2
	HA05537A	Volume Knob Ass'y	1	20	0J05850A	Top Cover Cushion	2
	0J05717A	LED Base	1	21	BA07440A	Volume LED P.C.B. Ass'y	1
	HA05538A	Balance/Volume Ring Ass'y	1	L01	OE03433A	BT3x6 @ Binding Projected (Black Chromate)	7
	OH05404A	Front Panel (TA-3)	1	L02	OE00868A	BT3x8 @ Binding	10
	OH05402A	Front Panel (TA-3A)	1	L03	OE03054A	BT3x8 @ Countersunk	3
	OH05403A	Front Panel (TA-3E)	1	L04	OE00921A	BT3x8 @ Binding (Black Chromate)	3
	OH05405A	Front Panel (TA-30)	1	L05	OE00888A	BT3x12 @ Binding	4
	0J05453A	Top Cover Sheet F	1	—	OM05280A	Serial No. Label (TA-3/3E/30)	1
	0J05754A	Top Cover Sheet FB	2	—	OM05247A	Serial No. Label (TA-3A)	1
	OH05103A	LED Lens B	2	—	OM05267A	Fuse Label T2.5A 250V (TA-3 (Australia)/3E)	1
12	—	Chassis Ass'y	1				
13	OM05289A	Fuse Caution Label T500mA 250V (TA-3A)	1				
14	OM05290A	Fuse Caution Label T5A 250V (TA-3A)	1				
15	0J05741A	Top Cover Spacer	6				
16	0J05740A	Top Cover Sheet R	3				

5.2. Chassis Ass'y (A01)

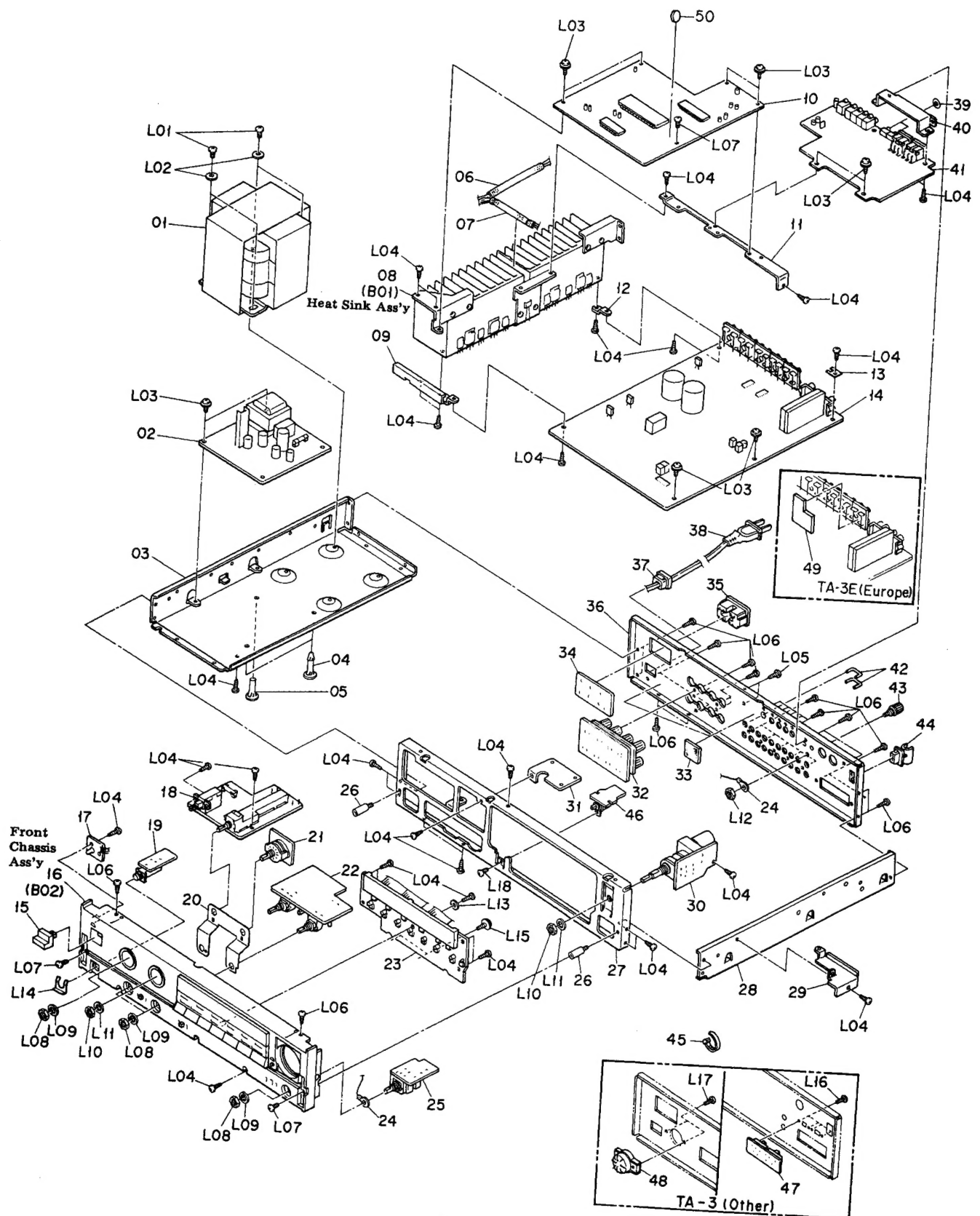


Fig. 5.2

Schematic Ref. No.	Part No.	Description	Qty	Schematic Ref. No.	Part No.	Description	Qty
5.2. Chassis Ass'y (A01)				37	OB90280A	Cord Bushing 2271	1
A01	—	Chassis Ass'y	1	38	OB80199A	AC Power Cord SPT-2 (TA-3 (Other)/3A)	1
01	OB50131A	Power Transformer (TA-3 (Other))	1		OB80148A	AC Power Cord (TA-3 (Australia))	1
	OB50129A	Power Transformer (TA-3 (Australia)/3E)	1		OB80228A	AC Power Cord (TA-3E)	1
	OB50128A	Power Transformer (TA-3A)	1	39	OB90274A	AC Power Cord (TA-30)	1
	OB50132A	Power Transformer (TA-30)	1	40	OJ05742A	P.C.B. Spacer	1
02	BA07424A	Power Supply P.C.B. Ass'y (TA-3 (Other))	1	41	OJ05736A	Remote P.C.B. Holder	1
	BA07426A	Power Supply P.C.B. Ass'y (TA-3 (Australia)/3E)	1		BA07442A	Video P.C.B. Ass'y (TA-3/3A/30)	1
	BA07422A	Power Supply P.C.B. Ass'y (TA-3A)	1		BA07459A	Video P.C.B. Ass'y (TA-3E)	1
	BA07423A	Power Supply P.C.B. Ass'y (TA-30)	1	42	OJ05710A	Shorting Pin	2
03	OJ05732A	Side Chassis R	1	43	JA04383A	Ground Terminal Ass'y	1
04	OJ05738A	Spacer Support A	2	44	OB90316A	AM Antenna Holder	1
05	OJ05739A	Spacer Support B	1	45	OB08515A	Insu-Lock 100	20
06	OB80211A	Glass Tube 150	1	46	BA07441A	Subsonic P.C.B. Ass'y	1
07	OB80212A	Glass Tube 100	1	47	BA07505A	IF Band Switch P.C.B. Ass'y (TA-3 (Other))	1
08	—	Heat Sink Ass'y	1	48	OB70049A	Voltage Selector Switch (TA-3 (Other))	1
09	OJ05729A	P.C.B. Holder B	1		BA07500A	Phono Input P.C.B. Ass'y (TA-3E)	1
10	BA07563A	Logic P.C.B. Ass'y (TA-3 (Other))	1		OB90399A	Lithium Battery [B501]	1
	BA07455A	Logic P.C.B. Ass'y (TA-3 (Australia)/3E)	1	L01	OE03426A	ST4x8 @ Pan Projected (Black Chromate) (TA-3/3E/30)	4
	BA07437A	Logic P.C.B. Ass'y (TA-3A)	1		OE00929A	M4x8 @ Binding (TA-3A)	4
	BA07547A	Logic P.C.B. Ass'y (TA-30)	1	L02	OE00031A	Washer 4x8x0.5 (TA-3A)	4
11	OJ05735A	Logic P.C.B. Holder	1	L03	OE03432A	BT3x6 @ Tapping (Black Chromate)	10
12	OJ05728A	P.C.B. Holder A	1	L04	OE00868A	BT3x8 @ Binding	32
13	OJ05670A	Earth Plate	2	L05	OE03433A	BT3x6 @ Binding Projected (Black Chromate)	2
14	BA07419A	Main P.C.B. Ass'y (TA-3 (Other))	1	L06	OE00921A	BT3x8 @ Binding (Black Chromate)	20
	BA07420A	Main P.C.B. Ass'y (TA-3 (Australia))	1	L07	OE00766A	M3x8 @ Binding	3
	BA07417A	Main P.C.B. Ass'y (TA-3A)	1	L08	OE03382A	Nut Hex. M7	4
	BA07421A	Main P.C.B. Ass'y (TA-3E)	1	L09	OE03383A	Washer M7	4
	BA07418A	Main P.C.B. Ass'y (TA-30)	1	L10	OE03375A	Nut Hex. M9	2
15	OH05325A	Power Button	1	L11	OE03376A	Washer M9	2
16	—	Front Chassis Ass'y	1	L12	OJ05673A	Nut 70 ZN3A	1
17	BA07504A	Power LED P.C.B. Ass'y	1	L13	OE00071A	Washer 3mm Fiber	1
18	BA07613A	Power Switch P.C.B. Ass'y (TA-3 (Other))	1	L14	OJ05427A	Mounting Plate	1
	BA07416A	Power Switch P.C.B. Ass'y (TA-3 (Australia)/3E)	1	L15	OE03278A	BT3x8 @ Tapping (Black Chromate)	2
	BA07414A	Power Switch P.C.B. Ass'y (TA-3A)	1	L16	OE03202A	M2.6x3 @ Binding (Black Chromate) (TA-3 (Other))	4
	BA07415A	Power Switch P.C.B. Ass'y (TA-30)	1	L17	OE00985A	M3x6 @ Binding (Black Chromate) (TA-3 (Other))	2
19	BA07503A	Headphone P.C.B. Ass'y	1	L18	OE03070A	M2.6x6 @ Binding	1
20	OJ05612A	Volume Ground Plate A	1		OB09290A	Ceramic Capacitor 0.01μ 50V Z (TA-3E)	2
21	BA07439A	Record Selector P.C.B. Ass'y	1		OB09292A	Ceramic Capacitor 0.1μ 50V Z (TA-3E)	1
22	BA07438A	Tone Control P.C.B. Ass'y (TA-3/3A/30)	1		OM05270A	Lithium Caution Label (TA-3E)	1
	BA07609A	Tone Control P.C.B. Ass'y (TA-3E)	1		OB90019A	Insu-Lock	2
23	BA07427A	Control Switch & Display P.C.B. Ass'y (TA-3/3A)	1		OB90400A	Fiber Washer 6mm	2
	BA07428A	Control Switch & Display P.C.B. Ass'y (TA-3E)	1		OJ05214A	P.C.B. Cushion	2
	BA07548A	Control Switch & Display P.C.B. Ass'y (TA-30)	1		OE00174A	Earth Lug (TA-3E)	4
24	OJ05703A	Lug Terminal 7	2				
25	BA07502A	Loudness P.C.B. Ass'y	1				
26	OJ05737A	Front Stud	2				
27	OJ05730A	Front Chassis	1				
28	OJ05731A	Chassis L	1				
29	OJ05733A	Volume Holder	1				
30	BA07501A	Motor Volume P.C.B. Ass'y	1				
31	OJ05726A	Front Holder	1				
32	BA07615A	Speaker Terminal P.C.B. Ass'y (TA-3/30)	1				
	BA07457A	Speaker Terminal P.C.B. Ass'y (TA-3A)	1				
	BA07458A	Speaker Terminal P.C.B. Ass'y (TA-3E)	1				
33	OJ05753A	Damping Sheet	2				
34	BA07544A	AC Outlet P.C.B. Ass'y (TA-3 (Other)/30)	1				
	BA07456A	AC Outlet P.C.B. Ass'y (TA-3A)	1				
35	OB81928A	AC Outlet AC-T05LB57 (TA-3 (Other)/3A)	1				
	OB81988A	AC Outlet (TA-3 (Australia))	1				
	OB81987A	AC Outlet (TA-3E)	1				
	OB81986A	AC Outlet 2P (TA-30)	1				
36	OH05413A	Rear Panel (TA-3 (Other))	1				
	OH05414A	Rear Panel (TA-3 (Australia))	1				
	OH05411A	Rear Panel (TA-3A)	1				
	OH05415A	Rear Panel (TA-3E)	1				
	OH05412A	Rear Panel (TA-30)	1				

5.3. Heat Sink Ass'y (B01)

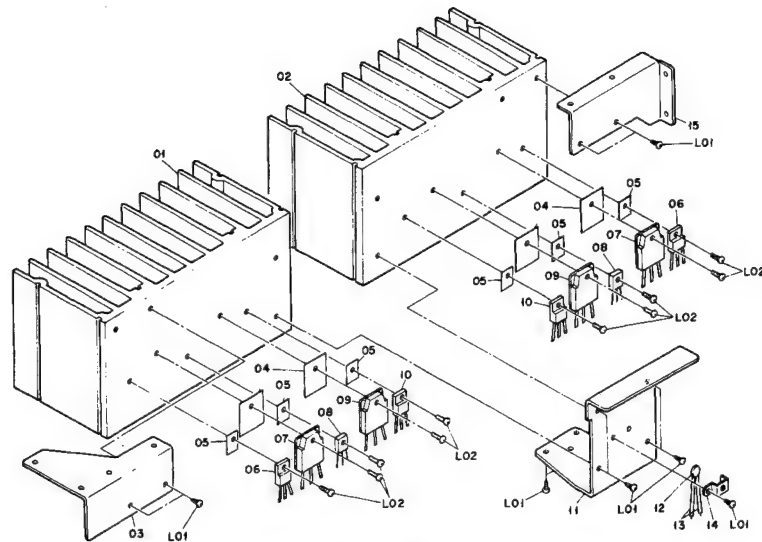


Fig. 5.3

5.4. Front Chassis Ass'y (B02)

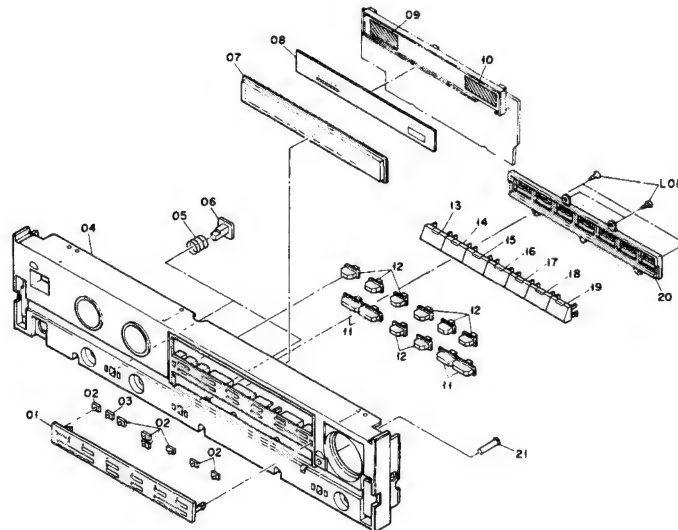


Fig. 5.4

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
5.3. Heat Sink Ass'y (B01)				5.4. Front Chassis Ass'y (B02)			
B01	—	Heat Sink Ass'y	1	B02	—	Front Chassis Ass'y	1
01	OJ05723A	Heat Sink A	1	01	OH05432A	Memory Plate	1
02	OJ05724A	Heat Sink B	1	02	OH05426A	Preset Lens A	7
03	OJ05718A	Heat Sink Holder F	1	03	OH05427A	Preset Lens B	1
04	OJ05671A	Insulator SIL 3P	4	04	OH05431A	Front Chassis	1
05	OJ05672A	Insulator SIL 220	6	05	OJ05406A	Push Spring	2
06	OB10293A	Transistor 2SA957 [Q311L,R]	2	06	OH05322A	Push Button	2
07	OB10295A	Transistor 2SC3856 (O,Y) [Q313L,R]	2	07	OH05326A	Display Lens	1
08	OB10287A	Transistor 2SB772 (P,Q) [Q309L,R]	2	08	OH05430A	Display Overlay 1089	1
09	OB10294A	Transistor 2SA1492 (O,Y) [Q312L,R]	2	09	OJ05708A	Diffuser Sheet A	1
10	OB10292A	Transistor 2SC2167 [Q310L,R]	2	10	OJ05709A	Diffuser Sheet B	1
11	OJ05725A	Joint Holder	1	11	OH05324A	Up/Down Button	4
12	OB19012A	Thermistor 50KD-5 [TH301]	1	12	OH05323A	Preset Button	8
13	OB80209A	Glass Tube 16	2	13	HA05546A	Phono Button Ass'y	1
14	OJ05615A	TH Holder	1	14	HA05547A	CD Button Ass'y	1
15	OJ05719A	Heat Sink Holder R	1	15	HA05548A	Tuner Button Ass'y	1
L01	OE00868A	BT3x8 @ Binding	13	16	HA05549A	Video 1 Button Ass'y	1
L02	OE00986A	M3x10 @ Binding	10	17	HA05550A	Video 2 Button Ass'y	1
—	OB90368A	Transistor Bush 3x1.4	4	18	HA05551A	Tape 1 Button Ass'y	1
				19	HA05552A	Tape 2 Button Ass'y	1
				20	OJ05712A	Button Base	1
				21	OH05438A	Mute Knob	1
				L01	OE00868A	BT3x8 @ Binding	4

Notes:

1. Mounting diagram shows a dip side view of the printed circuit board.
2. Diode is 1SS53, 1S1555, 1SS176 or 1N4148 unless otherwise specified.
3. Following transistors are interchangeable with each other.
 - a. 2SA733, 2SA608SP, 2SA1048, 2SA1175
 - b. 2SC945, 2SC536SP, 2SC2458, 2SC2785
4. Abbreviation for part name:
TR — Transistor, SiD — Silicon Diode, ZD — Zener Diode, Varicap — Variable Capacitance Diode
RK — Carbon Resistor, RM — Metal Film Resistor, RF — Fail Safe Type Resistor
CE — Electrolytic Capacitor, CML — Mylar Capacitor, CC — Ceramic Capacitor, CPP — PP Capacitor,
CMM — Metalized Mylar Capacitor, CSP — Polystyrene Capacitor, C — Mica Capacitor

AC Input

Power Switch P.C.B.

Power Supply P.C.B.

Transformer

R418
(TA-5A)

Ground

The diagram illustrates the experimental setup for the speech perception experiment. It features a central 'Speakers' box connected to two 'Listeners' boxes (LA and RA) via 'Lch' and 'Rch' channels. The setup includes various components like microphones, amplifiers, and a central processing unit. The diagram is labeled with components such as LA, LB, LG, RG, RB, RA, **C3/2L, **C3/1L, **C3/1R, **C3/2R, Lch, Rch, and Speakers.

99-TA-3E Only

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
6.1. AC Outlet P.C.B. Ass'y			S301	0B70142A	Rotary Switch	6.3. Speaker Terminal P.C.B. Ass'y		
R418	BA07456A	AC Outlet P.C.B. Ass'y (TA-3A)	S401	0B71010A	Power Switch (TA-3/3A/3E)	C311L,R	BA07615A	Speaker Terminal P.C.B. Ass'y (TA-3/30)
	BA07544A	AC Outlet P.C.B. Ass'y (TA-3 (Other)/30)	S401	0B71011A	Power Switch (TA-30)		BA07457A	Speaker Terminal P.C.B. Ass'y (TA-3A)
	0B60622A	AC Outlet P.C.B. RK 3.3M 1/2W J (TA-3A)	F403	0B90350A	Fuse T2.5A 250V (TA-3 (Australia)/3E)		BA07458A	Speaker Terminal P.C.B. Ass'y (TA-3E)
	0B05919A	Insu-Lock 100 (TA-3 (Other)/30)	F403	0B90348A	Fuse T5A 250V (TA-3 (Other)/3A)		0B60647A	Speaker Terminal P.C.B. CML 0.022μ 50V J (TA-3E)
	0B08515A		F403	0B90352A	Fuse 5A 250V (TA-30)		0B05582A	CML 0.022μ 50V J (TA-3E)
6.2. Power Switch P.C.B. Ass'y				0B81848A	Fuse Holder (TA-3 (Australia)/3E)	C312L,R	0B05582A	CML 0.022μ 50V J (TA-3E)
R334L,R C430	BA07413A	Power Switch P.C.B. Ass'y (TA-3 (Other))		0B81930A	Fuse Holder SN-5051 (TA-3 (Other)/3A/30) (2)		0B81950A	Speaker Terminal P.C.B. Ass'y (TA-3E)
	BA07416A	Power Switch P.C.B. Ass'y (TA-3 (Australia)/3E)						
	BA07414A	Power Switch P.C.B. Ass'y (TA-3A)						
	BA07415A	Power Switch P.C.B. Ass'y (TA-30)						
	0B60640A	Power Switch P.C.B. RF 330 2W						
	0B24208A	CC 4700P AC400V						
	0B41829A							

6.4. Headphone P.C.B. Ass'y

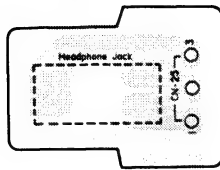


Fig. 6.4

6.5. Power LED P.C.B. Ass'y

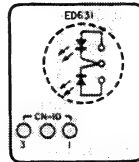


Fig. 6.5

6.6. Volume LED P.C.B. Ass'y

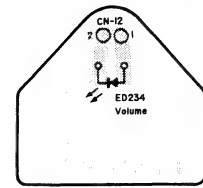


Fig. 6.6

6.7. Subsonic P.C.B. Ass'y

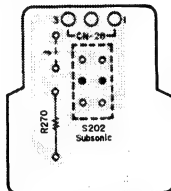


Fig. 6.7

6.8. Phono Input P.C.B. Ass'y

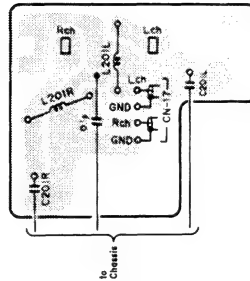


Fig. 6.8

6.9. Record Selector P.C.B. Ass'y

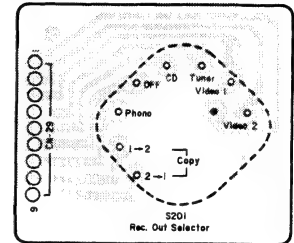


Fig. 6.9

6.10. Loudness P.C.B. Ass'y

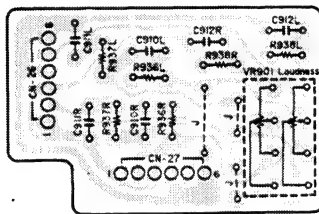


Fig. 6.10

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	
6.4. Headphone P.C.B. Ass'y			6.7. Subsonic P.C.B. Ass'y			6.10. Loudness P.C.B. Ass'y			
CN25	BA07503A	Headphone P.C.B. Ass'y	R270 S202	BA07441A	Subsonic P.C.B. Ass'y	VR901 R936L,R R937L,R R938L,R C910L,R C911L,R C912L,R CN26 CN27	BA07502A	Loudness P.C.B. Ass'y	
	OB60643A	Headphone P.C.B. Ribbon Wire 3P 140		OB60636A	Subsonic P.C.B. RK 270K 1/4W J		OB60642A	Loudness P.C.B. VR 300Kx2	
	OB83511A OB81757A	Headphone Jack (1)		OB05620A OB70127A	Push Switch PSR-221 3P Connector Ass'y 300		OB30097A OB09709A OB09699A OB09707A OB05550A OB05582A OB01780A OB83515A OB83502A	RK 22K 1/6W J RK 8.2K 1/6W J RK 18K 1/6W J CML 1000P 50V J CML 0.022μ 50V J CML 0.1μ 50V J Ribbon Wire 6P 140 6P Connector Ass'y 300	
6.5. Power LED P.C.B. Ass'y			CN28	OB83684A					
ED631 CN10	BA07504A	Power LED P.C.B. Ass'y		6.8. Phono Input P.C.B. Ass'y					
	OB60644A OB12421A	Power LED P.C.B. LED Green/Red SPR-56PDWF M Ribbon Wire 3P 360		L201L,R C201L,R	BA07500A		Phono Input P.C.B. Ass'y (TA-3E)		
	OB83512A		OB60658A OB51266A OB41071A OB09292A		Phono Input P.C.B. Coil 48μH CC 100P 50V J CC 0.1μ 50V Z				
6.6. Volume LED P.C.B. Ass'y			6.9. Record Selector P.C.B. Ass'y						
ED234 CN12	BA07440A	Volume LED P.C.B. Ass'y	S201 CN29	BA07439A	Record Selector P.C.B. Ass'y				
	OB60635A OB12395A	Volume LED P.C.B. LED P-Green SLR-34PC3F 2P Connector Ass'y 230		OB60621A OB70143A	Record Selector P.C.B. Rotary Switch MSB18BP 9P Connector Ass'y 500				
	OB83685A			OB83678A					

6.11. Motor Volume P.C.B. Ass'y

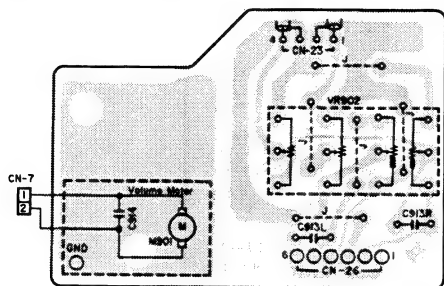


Fig. 6.11

6.12. IF Band Switch P.C.B. Ass'y

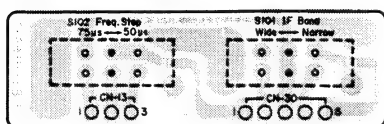


Fig. 6.12

6.13. Tone Control P.C.B. Ass'y

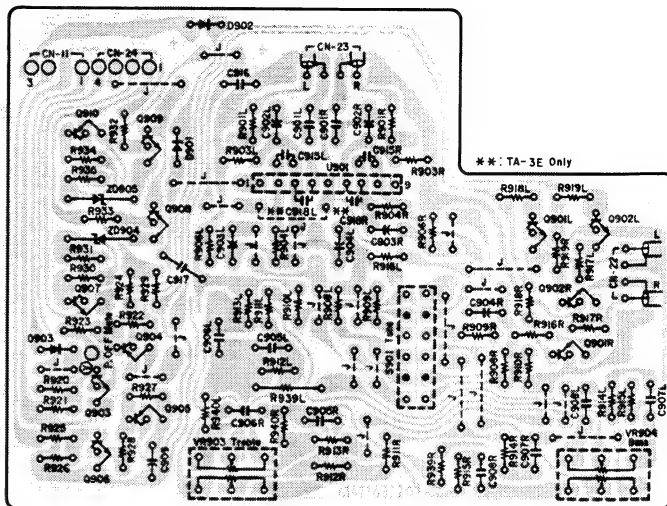


Fig. 6.13

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
6.11. Motor Volume P.C.B. Ass'y			6.13. Tone Control P.C.B. Ass'y			R939L	OB05576A	RK 470 1/4W J
VR902 C913L,R C914 CN7	BA07501A	Motor Volume P.C.B. Ass'y	U901 Q901L,R Q902L,R Q903 Q904,905 Q906,907 Q908 Q909 Q910 ZD904,905	BA07438A	Tone Control P.C.B. Ass'y (TA-3/3A/30)	R939R	OB09669A	RK 470 1/6W J
	OB60641A	Motor Volume P.C.B.		BA07609A	Tone Control P.C.B. Ass'y (TA-3E)	R940L,R	OB09705A	RK 15K 1/6W J
	OB30096A	VR 50KBx2		OB60620A	Tone Control P.C.B. IC μ PC4570HA	C901L,R	OB41394A	CP 220P 50V J
	OB41739A	CC 22P 50V J		OB06299A	TR 2SC2878	C902L,R	OB09332A	CE 2.2 μ 50V (LN)
	OB09292A	CC 0.1 μ 50V Z		OB06299A	TR 2SC2878	C903L,R	OB09333A	CE 4.7 μ 50V
	OB83490A	2P Connector Ass'y 200		OB06100A	TR 2SC945 (K,P,Q)	C904L,R	OB09218A	CE 47 μ 16V (LN)
	OB08515A QJ05703A	Insu-Lock 100 (1) Lug Terminal 7 (1)		OB06013A	TR 2SA733 (P,Q)	C905L,R	OB05682A	CML 0.068 μ 50V J
6.12. IF Band Switch P.C.B. Ass'y					S901	OB70140A	Push Switch	
S101,102 CN13	BA07505A	IF Band Switch P.C.B. Ass'y (TA-3 (Other))			CN11	OB83494A	3P Connector Ass'y 350	
	OB60645A	IF Band Switch P.C.B.			CN22	OB83498A	4P Connector Ass'y 500	
CN30	OB70137A	Slide Switch			CN23A	OB83548A	Lead Wire 400	
	OB83492A	3P Connector Ass'y 200			CN23B	OB83549A	Lead Wire 400	
	OB83500A	5P Connector Ass'y 300			CN24	OB83496A	4P Connector Ass'y 400	
					Y-Y	OB83506A	Ter. Grip Ass'y (1)	

6.14. Power Supply P.C.B. Ass'y

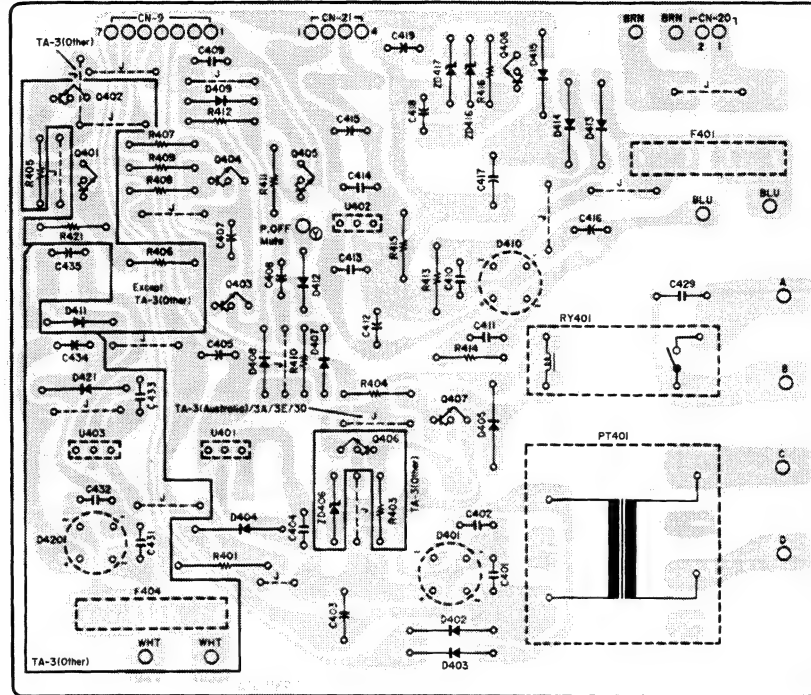


Fig 6.14

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
6.14. Power Supply P.C.B. Ass'y			D420	0B12604A	SiD WO2M (TA-3 (Other))	C412	0B40095A	CE 1000μ 25V
	BA07424A	Power Supply P.C.B. Ass'y (TA-3 (Other))	D421	0B12586A	SiD 1N4002 (TA-3 (Other))	C413,414	0B09292A	CC 0.1μ 50V Z
	BA07426A	Power Supply P.C.B. Ass'y (TA-3 (Australia)/3E)	PT401	0B50137A	Sub Transformer (TA-3 (Other)/3A)	C415	0B40079A	CE 220μ 16V
	BA07422A	Power Supply P.C.B. Ass'y (TA-3A)		0B50138A	Sub Transformer (TA-30)	C416	0B40094A	CE 470μ 25V
	BA07423A	Power Supply P.C.B. Ass'y (TA-30)		0B50141A	Sub Transformer (TA-3 (Australia)/3E)	C417	0B40123A	CE 470μ 50V
U401	0B60619A	Power Supply P.C.B. IC μPC7805H	R401	0B24210A	RF 56 1W (TA-3 (Other))	C418	0B40100A	CE 10μ 35V
U402	0B11010A	IC μPC7812H	R403	0B20519A	RK 820 1/2W J (TA-3 (Other))	C419	0B09126A	CE 100μ 35V
U403	0B11010A	IC μPC7805H (TA-3 (Other))	R404	0B05622A	RK 2.2K 1/4W J (Except TA-3 (Other))	C429	0B41829A	CC 4700P AC400V
Q401	0B06100A	TR 2SC945 (K,P,Q) (Except TA-3 (Other))	R405	0B05576A	RK 470 1/4W J (Except TA-3 (Other))	C431,432	0B09292A	CC 0.1μ 50V Z (TA-3 (Other))
Q402	0B10097A	TR 2SA952 (K,L) (Except TA-3 (Other))	R406	0B05615A	RK 22K 1/4W J (Except TA-3 (Other))	C433	0B09292A	CC 0.1μ 50V Z (TA-3 (Other))
Q403,404	0B06100A	TR 2SC945 (K,P,Q)	R407	0B09263A	RK 12K 1/4W J	C434	0B40082A	CE 1000μ 16V (TA-3 (Other))
Q405	0B06100A	TR 2SC945 (K,P,Q)	R408	0B01889A	RK 100K 1/4W J	C435	0B05899A	CE 220μ 10V (TA-3 (Other))
Q406	0B10248A	TR 2SD313 (E) (TA-3 (Other))	R409	0B05615A	RK 22K 1/4W J	RY401	0B90334A	Relay VS 12V
Q407,408	0B06100A	TR 2SC945 (K,P,Q)	R410	0B01682A	RK 6.8K 1/4W J	F401	0B90288A	Fuse T500mA 250V (TA-3 (Australia)/3E)
ZD406	0B12390A	ZD 13VRD13EB3 (TA-3 (Other))	R411,412	0B01889A	RK 100K 1/4W J		0B90345A	Fuse T0.5A 250V (TA-3 (Other)/3A)
ZD416,417	0B12615A	ZD 15V B2	R413,414	0B01681A	RK 3.3K 1/4W J	F404	0B90289A	Fuse T1A 250V (TA-3 (Other))
D401	0B12604A	SiD WO2M	R415	0B05622A	RK 2.2K 1/4W J	CN9	B83505A	7P Connector Ass'y 400
D402,403	0B12586A	SiD 1N4002	R416	0B05575A	RK 560 1/4W J	CN20	0B83686A	2P Connector Ass'y 300
D404,405	0B12586A	SiD 1N4002	R421	0B01888A	RK 10K 1/4W J (Except TA-3 (Other))	CN21	0B83497A	4P Connector Ass'y 450
D407,408	0B12584A	SiD 1N4148					0B81848A	Fuse Holder (2)
D409	0B12584A	SiD 1N4148	C401,402	0B09292A	CC 0.1μ 50V Z			
D410	0B12604A	SiD WO2M	C403	0B40339A	CE 470μ 35V (TA-3 (Other))			
D411	0B12584A	SiD 1N4148 (Except TA-3 (Other))		0B40082A	CE 1000μ 16V (Except TA-3 (Other))			
D412	0B12584A	SiD 1N4148	C404	0B09292A	CC 0.1μ 50V Z			
D413,414	0B12586A	SiD 1N4002	C405	0B40068A	CE 1000μ 10V			
D415	0B12586A	SiD 1N4002	C407,408	0B09372A	CE 2.2μ 50V			
			C409,410	0B09292A	CC 0.1μ 50V Z			
			C411	0B09292A	CC 0.1μ 50V Z			

6.15. Control Switch & Display P.C.B. Ass'y

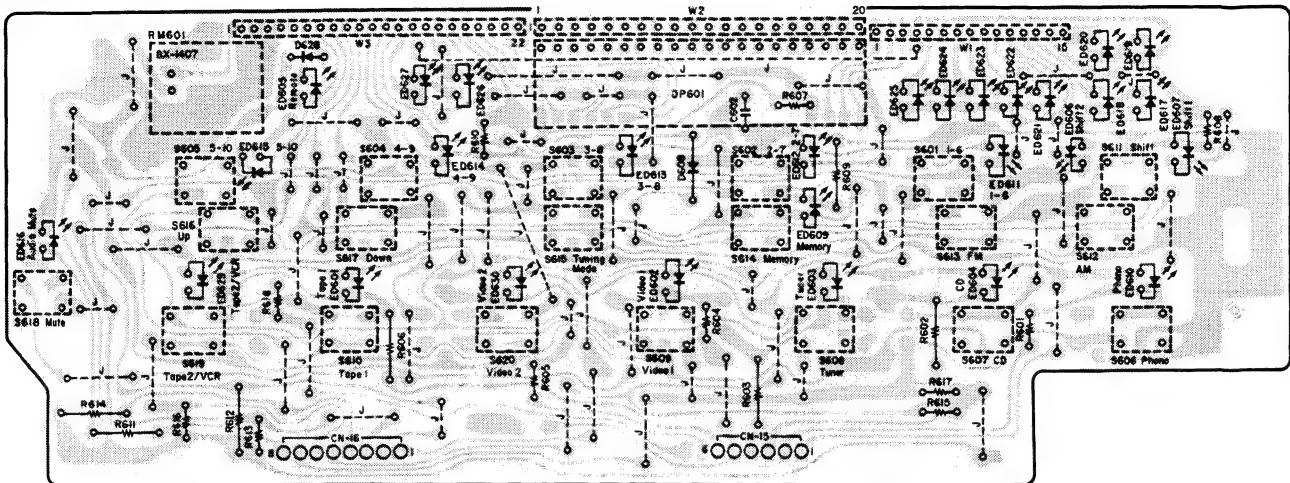


Fig. 6.15

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
6.15. Control Switch & Display P.C.B. Ass'y					
	BA07427A	Control Switch & Display P.C.B. Ass'y (TA-3/3A)	S601,602 S603,604 S605,606 S607,608 S609,610 S611,612 S613,614 S615,616 S617,618 S619,620 CN15 CN16 RM601 D-D W-1 W-2 W-3 W-3	0B70130A 0B70130A 0B70130A 0B70130A 0B70130A 0B70130A 0B70130A 0B70130A 0B70130A 0B70130A 0B83513A 0B83513A 0B11511A 0B83528A 0B83519A 0B83521A 0B83670A 0B83520A 0E00868A 0H05428A 0J05416A	Tact Switch Tact Switch Tact Switch Tact Switch Tact Switch Tact Switch Tact Switch Tact Switch Tact Switch Tact Switch Ribbon Wire 4P 260 Ribbon Wire 4P 260 IC BX1407 Lead Wire 100 Flat Wire 15P 70 Flat Wire 20P 70 Flat Wire 22P 70 (TA-3E) Flat Wire 18P 70 (TA-3/3A/30) BT3x8 ⊕ Binding (2) Display Reflector (1) LED Reflector (7)
	BA07428A	Control Switch & Display P.C.B. Ass'y (TA-3E)			
	BA07548A	Control Switch & Display P.C.B. Ass'y (TA-30)			
	OB60639A	Control Switch & Display P.C.B.			
D608	OB12584A	SiD 1N4148			
D628	OB06398A	SiD 1SS176			
DP601	OB12608A	LED Display LTF2401 (TA-3/3A)			
	OB12616A	LED Display LTF2501 (TA-3E/30)			
ED601,602	OB12395A	LED P-Green			
ED603,604	OB12395A	LED P-Green			
ED605,606	OB12395A	LED P-Green			
ED607	OB12395A	LED P-Green			
ED609,610	OB12395A	LED P-Green			
ED611,612	OB12395A	LED P-Green			
ED613,614	OB12395A	LED P-Green			
ED615,616	OB12395A	LED P-Green			
ED617,618	OB12625A	LED P-Green			
ED619,620	OB12625A	LED P-Green			
ED621,622	OB12395A	LED P-Green			
ED623,624	OB12395A	LED P-Green			
ED625	OB12395A	LED P-Green			
ED626	OB12625A	LED P-Green			
ED627	OB12625A	LED P-Green			
ED629,630	OB12395A	LED P-Green			
R601	OB09681A	RK 1.5K 1/6W J			
R602,603	OB05698A	RK 1.5K 1/4W J			
R604,605	OB09681A	RK 1.5K 1/6W J			
R606	OB05698A	RK 1.5K 1/4W J			
R607	OB09669A	RK 470 1/6W J			
R608	OB09661A	RK 220 1/6W J			
R609	OB01933A	RK 220 1/4W J			
R610	OB09661A	RK 220 1/6W J			
R611	OB01933A	RK 220 1/4W J			
R612	OB01889A	RK 100K 1/4W J			
R613	OB09725A	RK 100K 1/6W J			
R614	OB01889A	RK 100K 1/4W J			
R615	OB09725A	RK 100K 1/6W J			
R616,617	OB09725A	RK 100K 1/6W J			
R618	OB09681A	RK 1.5K 1/6W J			
C602	OB09290A	CC 0.01μ 50V Z			

6.16. Video P.C.B. Ass'y

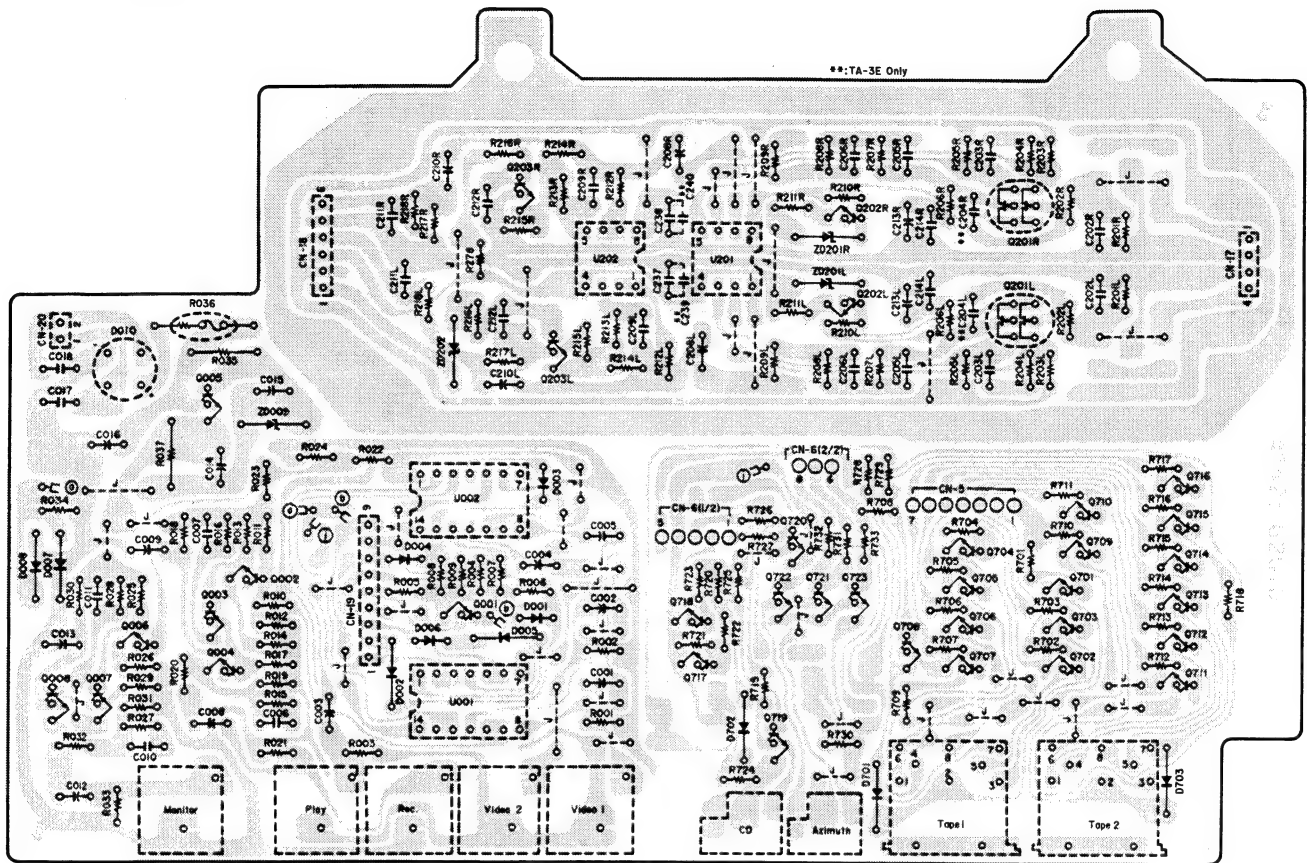


Fig. 6.16

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
6.16. Video P.C.B. Ass'y			R212L,R	OB09687A	RK 2.7K 1/6W J
	BA07442A	Video P.C.B. Ass'y (TA-3/3A/30)	R213L,R	OB09741A	RK 470K 1/6W J
	BA07459A	Video P.C.B. Ass'y (TA-3E)	R214L,R	OB09693A	RK 4.7K 1/6W J
	OB60646A	Video P.C.B.	R215L,R	OB09749A	RK 1M 1/6W J
U001,002	OB06169A	IC TC4066BP	R216L,R	OB09741A	RK 470K 1/6W J
U201	OB06146A	IC NJM4558DD	R217L,R	OB09725A	RK 100K 1/6W J
U202	OB11005A	IC 072DE	R218L,R	OB09657A	RK 150 1/6W J
Q001	OB06013A	TR 2SA733 (P,Q)	R278	OB09741A	RK 470K 1/6W J
Q002	OB06100A	TR 2SC945 (K,P,Q)	R701,702	OB09701A	RK 10K 1/6W J
Q003	OB06013A	TR 2SA733 (P,Q)	R703,704	OB09701A	RK 10K 1/6W J
Q004	OB06100A	TR 2SC945 (K,P,Q)	R705,706	OB09701A	RK 10K 1/6W J
Q005	OB06452A	TR 2SD1406	R707,708	OB09701A	RK 10K 1/6W J
Q006	OB06100A	TR 2SC945 (K,P,Q)	R709	OB09677A	RK 1K 1/6W J
Q007	OB06013A	TR 2SA733 (P,Q)	R710,711	OB09701A	RK 10K 1/6W J
Q008	OB06100A	TR 2SC945 (K,P,Q)	R712,713	OB09701A	RK 10K 1/6W J
Q201L,R	OB10188A	FET 2SK240 (BL)	R714,715	OB09701A	RK 10K 1/6W J
Q202L,R	OB06100A	TR 2SC945 (K,P,Q)	R716,717	OB09701A	RK 10K 1/6W J
Q203L,R	OB06299A	TR 2SC2878	R718	OB09677A	RK 1K 1/6W J
Q701,702	OB06100A	TR 2SC945 (K,P,Q)	R719	OB09709A	RK 22K 1/6W J
Q703,704	OB06100A	TR 2SC945 (K,P,Q)	R720,721	OB09701A	RK 10K 1/6W J
Q705,706	OB06100A	TR 2SC945 (K,P,Q)	R722,723	OB09701A	RK 10K 1/6W J
Q707,708	OB06100A	TR 2SC945 (K,P,Q)	R724	OB09637A	RK 22 1/6W J
Q709,710	OB06100A	TR 2SC945 (K,P,Q)	R725,726	OB09701A	RK 10K 1/6W J
Q711,712	OB06100A	TR 2SC945 (K,P,Q)	R727	OB09701A	RK 10K 1/6W J
Q713,714	OB06100A	TR 2SC945 (K,P,Q)	R728,729	OB09637A	RK 22 1/6W J
Q715,716	OB06100A	TR 2SC945 (K,P,Q)	R730	OB09637A	RK 22 1/6W J
Q717,718	OB06100A	TR 2SC945 (K,P,Q)	R731,732	OB09701A	RK 10K 1/6W J
Q719,720	OB06100A	TR 2SC945 (K,P,Q)	R733	OB09701A	RK 10K 1/6W J
Q721,722	OB06100A	TR 2SC945 (K,P,Q)	C001,002	OB01862A	CE 22μ 16V
Q723	OB06100A	TR 2SC945 (K,P,Q)	C003,004	OB01862A	CE 22μ 16V
ZD009	OB12390A	ZD 13V RD13EB3	C005	OB01862A	CE 22μ 16V
ZD201L,R	OB06233A	ZD 10V RD10EB3	C006	OB05905A	CC 5P 50V C
ZD202	OB12627A	ZD 18V B2	C007	OB41738A	CC 390P 50V J
D001	OB06398A	SiD 1SS176	C008	OB40082A	CE 1000μ 16V
D002	OB12584A	SiD 1N4148	C009	OB01400A	CE 100μ 16V
D003,004	OB06398A	SiD 1SS176	C010	OB05905A	CC 5P 50V C
D005	OB12584A	SiD 1N4148	C011	OB41738A	CC 390P 50V J
D006	OB06398A	SiD 1SS176	C012	OB40082A	CE 1000μ 16V
D007,008	OB12584A	SiD 1N4148	C013,014	OB01400A	CE 100μ 16V
D010	OB12604A	SiD WO2M	C015	OB01398A	CE 220μ 16V
D701,702	OB12584A	SiD 1N4148	C016	OB40094A	CE 470μ 25V
D703	OB12584A	SiD 1N4148	C017,018	OB09292A	CC 0.1μ 50V Z
R001,002	OB09650A	RK 75 1/6W J	C202L,R	OB41894A	CSP 100P 100V J (TA-3/3A/30)
R003	OB09650A	RK 75 1/6W J		OB09281A	CC 150P 50V K (TA-3E)
R004,005	OB09749A	RK 1M 1/6W J	C204L,R	OB41735A	CC 100P 50V J (TA-3E)
R006,007	OB09749A	RK 1M 1/6W J	C203L,R	OB41175A	CML 0.15μ 50V J
R008,009	OB09749A	RK 1M 1/6W J	C205L,R	OB41138A	CPP 3600P 100V G
R010	OB09651A	RK 82 1/6W J	C206L,R	OB41125A	CPP 1000P 100V G
R011	OB09691A	RK 3.9K 1/6W J	C208L,R	OB09332A	CE 2.2μ 50V (LN)
R012	OB09679A	RK 1.2K 1/6W J	C209L,R	OB05582A	CML 0.022μ 50V J
R013	OB09677A	RK 1K 1/6W J	C210L,R	OB09148A	CE 10μ 25V (LN)
R014	OB09665A	RK 330 1/6W J	C211L,R	OB41209A	CE 220P 100V J
R015,016	OB09669A	RK 470 1/6W J	C212L,R	OB09292A	CC 0.1μ 50V Z
R017	OB09683A	RK 1.8K 1/6W J	C213L,R	OB09137A	CE 22μ 25V
R018	OB09653A	RK 100 1/6W J	C214L,R	OB05681A	CML 0.01μ 50V J
R019	OB09661A	RK 220 1/6W J	C237,238	OB05796A	CML 0.047μ 50V J
R020	OB09649A	RK 68 1/6W J	C239,240	OB09291A	CC 0.022μ 50V Z (TA-3E)
R021	OB09701A	RK 10K 1/6W J	CN5	OB83681A	7P Connector Ass'y 300
R022	OB09651A	RK 82 1/6W J	CN6	OB83680A	8P Connector Ass'y 300
R023	OB09691A	RK 3.9K 1/6W J	CN17	OB81761A	4P-T Post
R024	OB09679A	RK 1.2K 1/6W J	CN18	OB81763A	6P-T Post
R025	OB09677A	RK 1K 1/6W J	CN19	OB81766A	9P-T Post
R026	OB09665A	RK 330 1/6W J	CN20	OB81759A	2P-T Post
R027,028	OB09669A	RK 470 1/6W J	A-A	OB83463A	Lead Wire 60
R029	OB09683A	RK 1.8K 1/6W J	B-B	OB83463A	Lead Wire 60
R030	OB09653A	RK 100 1/6W J	J-J	OB83676A	Lead Wire 100
R031	OB09661A	RK 220 1/6W J		OB81754A	DIN Socket 8P (2)
R032	OB09649A	RK 68 1/6W J		OB81947A	Pin Jack 1P (5)
R033	OB09701A	RK 10K 1/6W J		OB81952A	ST Mini Jack (2)
R034	OB09725A	RK 100K 1/6W J			
R035	OB05698A	RK 1.5K 1/4W J			
R037	OB01857A	RK 1K 1/4W J			
R036	OB24023A	Fuse Resister 1			
R201L,R	OB09718A	RK 51K 1/6W J			
R202L,R	OB09623A	RK 5.6 1/6W J			
R203L,R	OB22305A	RM 4.70K 1/4W F			
R204L,R	OB09637A	RK 22 1/6W J			
R205L,R	OB22305A	RM 4.70K 1/4W F			
R206L,R	OB22250A	RM 1.60K 1/4W F			
R207L,R	OB09561A	RM 909K 1/4W F			
R208L,R	OB22443A	RM 75.0K 1/4W F			
R209L,R	OB09669A	RK 470 1/6W J			
R210L,R	OB09695A	RK 5.6K 1/6W J			
R211L,R	OB22256A	RM 1.80K 1/4W F			

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
6.1.7. Logic P.C.B. Ass'y			R533	OB09689A	RK 3.3K 1/6W J	C522	OB09291A	CC 0.022μ 50V Z
	BA07563A	Logic P.C.B. Ass'y (TA-3 (Other))	R534	OB09683A	RK 1.8K 1/6W J	C523,524	OB01674A	CE 10μ 25V
	BA07455A	Logic P.C.B. Ass'y (TA-3 (Australia)/3E)	R535	OB09689A	RK 3.3K 1/6W J	C525	OB01409A	CE 47μ 25V
	BA07437A	Logic P.C.B. Ass'y (TA-3A)	R536,537	OB09701A	RK 10K 1/6W J	C526	OB40117A	CE 22μ 50V
	BA07547A	Logic P.C.B. Ass'y (TA-30)	R538,539	OB09701A	RK 10K 1/6W J	C527,528	OB09291A	CC 0.022μ 50V Z
			R540,541	OB09701A	RK 10K 1/6W J (TA-3 (Other)/3E)	C529	OB01405A	CE 1μ 50V
			R542	OB09693A	RK 4.7K 1/6W J (TA-3 (Other)/3E)	C530	OB41737A	CC 330P 50V J
			R543,544	OB09701A	RK 10K 1/6W J (TA-3 (Other)/3E)	C531	OB09291A	CC 0.022μ 50V Z
			R545,546	OB09701A	RK 10K 1/6W J (TA-3 (Other)/3E)	C532	OB40029A	CE 4.7μ 50V
						C533,534	OB09286A	CC 470P 50V K
						C535,536	OB09291A	CC 0.022μ 50V Z
						C537	OB09291A	CC 0.022μ 50V Z
U501	OB60638A	Logic P.C.B.	R547	OB09709A	RK 22K 1/6W J (TA-3 (Other)/3E)	CN1	OB81759A	2P-T Post
U502	OB11159A	IC TD6104P				CN2,3	OB81762A	5P-T Post
U503	OB11161A	IC TC9147BP	R548,549	OB09717A	RK 47K 1/6W J	CN4	OB81761A	4P-T Post
U504	OB11160A	IC TD6301AP	R550	OB09717A	RK 47K 1/6W J	CN5	OB81764A	7P-T Post
U505	OB11244A	IC LB1413N	R551,552	OB09661A	RK 220 1/6W J	CN6	OB81765A	8P-T Post
U506	OB11530A	IC BA6208	R553,554	OB09661A	RK 220 1/6W J	CN7	OB81759A	2P-T Post
U507	OB11513A	IC μPD74HC237	R555,556	OB09661A	RK 220 1/6W J	CN8	OB81766A	9P-T Post
Q501,502	OB10265A	TR 2SC1842 (E)	R557,558	OB09661A	RK 220 1/6W J	CN9	OB81764A	7P-T Post
Q503	OB06013A	TR 2SA733 (P,Q)	R559,560	OB09661A	RK 220 1/6W J	CN11	OB81760A	3P-T Post
Q504,505	OB06100A	TR 2SC945 (K,P,Q)	R561,562	OB09661A	RK 220 1/6W J	CN12	OB81759A	2P-T Post
Q506,507	OB06100A	TR 2SC945 (K,P,Q)	R563,564	OB09661A	RK 220 1/6W J	CN13	OB81760A	3P-T Post
Q508	OB06013A	TR 2SA733 (P,Q)	R565,566	OB09661A	RK 220 1/6W J			(TA-3 (Other))
Q509,510	OB06100A	TR 2SC945 (K,P,Q) (TA-3 (Other)/3E)	R567,568	OB09661A	RK 220 1/6W J	CN14	OB81762A	5P-T Post
			R569,570	OB09661A	RK 220 1/6W J	E-E	OB83530A	Lead Wire 160
Q511,512	OB06100A	TR 2SC945 (K,P,Q) (TA-3 (Other)/3E)	R571	OB09661A	RK 220 1/6W J	F-F	OB83531A	Lead Wire 140
			R572	OB09653A	RK 100 1/6W J	G-G	OB83529A	Lead Wire 60
Q513,514	OB06100A	TR 2SC945 (K,P,Q)	R573	OB09307A	RK 4.3K 1/4W J	H-H	OB83508A	Ribbon Wire 2P
Q515,516	OB06100A	TR 2SC945 (K,P,Q)	R574	OB09661A	RK 220 1/6W J (TA-3 (Other)/3E)	L-L	OB83688A	Ribbon Wire 4P
Q517,518	OB06100A	TR 2SC945 (K,P,Q)				M-M	OB83534A	Lead Wire 80
Q519,520	OB06100A	TR 2SC945 (K,P,Q)	R575,576	OB09654A	RK 110 1/6W J (TA-3 (Other)/3E)	N-N	OB83534A	Lead Wire 80
Q521,522	OB06100A	TR 2SC945 (K,P,Q)					OJ05751A	IC Shield Plate A (1)
Q523,524	OB06100A	TR 2SC945 (K,P,Q)	R577	OB09654A	RK 110 1/6W J (TA-3 (Other)/3E)		OJ05752A	IC Shield Plate B (1)
Q525	OB06013A	TR 2SA733 (P,Q)						
Q526	OB10263A	TR 2SC2060	R578	OB09665A	RK 330 1/6W J			
Q527,528	OB06100A	TR 2SC945 (K,P,Q)	R579	OB05576A	RK 470 1/4W J			
Q529	OB06100A	TR 2SC945 (K,P,Q)	R580	OB09657A	RK 150 1/6W J			
Q530,531	OB06013A	TR 2SA733 (P,Q)	R581	OB09669A	RK 470 1/6W J			
Q532,533	OB06013A	TR 2SA733 (P,Q)	R582	OB09677A	RK 1K 1/6W J			
Q534,535	OB06013A	TR 2SA733 (P,Q)	R583	OB09701A	RK 10K 1/6W J			
Q536	OB06013A	TR 2SA733 (P,Q)	R584	OB09717A	RK 47K 1/6W J			
ZD520	OB12156A	ZD 6.8V B2	R585	OB09661A	RK 220 1/6W J			
D501	OB12584A	SID 1N4148	R586,587	OB01888A	RK 10K 1/4W J			
D502	OB06398A	SID 1SS176	R588,589	OB01888A	RK 10K 1/4W J			
D503,504	OB12584A	SID 1N4148	R590,591	OB01888A	RK 10K 1/4W J			
D505,506	OB06398A	SID 1SS176	R592	OB01888A	RK 10K 1/4W J			
D507	OB12584A	SID 1N4148	R593,594	OB09701A	RK 10K 1/6W J			
D508	OB06398A	SID 1SS176 (TA-3 (Other)/3E)	R595	OB09701A	RK 10K 1/6W J			
			R596,597	OB01888A	RK 10K 1/4W J			
D509,510	OB06398A	SID 1SS176	R598	OB09701A	RK 10K 1/6W J			
D511,512	OB06398A	SID 1SS176	R599	OB09677A	RK 1K 1/6W J			
D513	OB06398A	SID 1SS176	R5100	OB09701A	RK 10K 1/6W J			
D514	OB12584A	SID 1N4148	R5101	OB01933A	RK 220 1/4W J			
D515	OB06398A	SID 1SS176	R5102	OB09725A	RK 100K 1/6W J			
X501	OB92006A	X'tal 7.2MHz	R5103,5104	OB09701A	RK 10K 1/6W J			
X502	OB92014A	Ceramic Resonator 4MHz	R5105,5106	OB09717A	RK 47K 1/6W J			
			R5107,5108	OB09717A	RK 47K 1/6W J			
L501	OB51274A	Coil 22μH	R5109	OB09717A	RK 47K 1/6W J			
L502	OB51291A	Coil 47μH	R5110,5111	OB09717A	RK 47K 1/6W J			
R501	OB09677A	RK 1K 1/6W J	R5112	OB09725A	RK 100K 1/6W J			
R502	OB09661A	RK 220 1/6W J (TA-3/3A/30)	R5113	OB09707A	RK 18K 1/6W J			
	OB09665A	RK 330 1/6W J (TA-3E)	R5114	OB01889A	RK 100K 1/4W J			
			R5115	OB09661A	RK 220 1/6W J			
			R5116	OB09657A	RK 150 1/6W J			
			R5117	OB01889A	RK 100K 1/4W J			
R503,504	OB09721A	RK 68K 1/6W J	C501	OB09288A	CC 1000P 50V K			
R505	OB09725A	RK 100K 1/6W J	C502	OB05899A	CE 220μ 10V			
R506	OB01889A	RK 100K 1/4W J (TA-3/3A/3E)	C503	OB09291A	CC 0.022μ 50V Z			
			C504	OB41900A	CC 39P 50V J (TA-3/3A/3E)			
R507	OB09725A	RK 100K 1/6W J		OB41735A	CC 100P 50V J (TA-30)			
R508	OB01888A	RK 10K 1/4W J						
R509	OB09677A	RK 1K 1/6W J						
R510	OB09699A	RK 8.2K 1/6W J						
R511	OB01888A	RK 10K 1/4W J	C505	OB09586A	CC 2200P 50V K			
R512	OB00346A	RK 1K 1/2W J	C506	OB09290A	CC 0.01μ 50V Z			
R513	OB01888A	RK 10K 1/4W J	C507	OB01405A	CE 1μ 50V			
R514	OB01889A	RK 100K 1/4W J	C508	OB01400A	CE 100μ 16V			
R515,516	OB09725A	RK 100K 1/6W J	C509,510	OB09291A	CC 0.022μ 50V Z			
R517	OB01889A	RK 100K 1/4W J	C511	OB40067A	CE 470μ 10V			
R518,519	OB09697A	RK 6.8K 1/6W J	C512,513	OB41740A	CC 33P 50V J			
R520,521	OB01857A	RK 1K 1/4W J	C514	OB01405A	CE 1μ 50V			
R522,523	OB09677A	RK 1K 1/6W J	C515	OB40025A	CE 0.47μ 50V			
R524,525	OB09677A	RK 1K 1/6W J	C516	OB09327A	CE 0.33μ 50V			
R526,527	OB09677A	RK 1K 1/6W J	C517	OB41618A	CC 0.1μ 25V J			
R528,529	OB09677A	RK 1K 1/6W J	C518	OB40103A	CE 47μ 35V			
R530,531	OB09677A	RK 1K 1/6W J	C519,520	OB09793A	CC 30P 50V J			
R532	OB09677A	RK 1K 1/6W J	C521	OB09387A	CC 0.047μ 50V Z			

6.17. Logic P.C.B. Ass'y

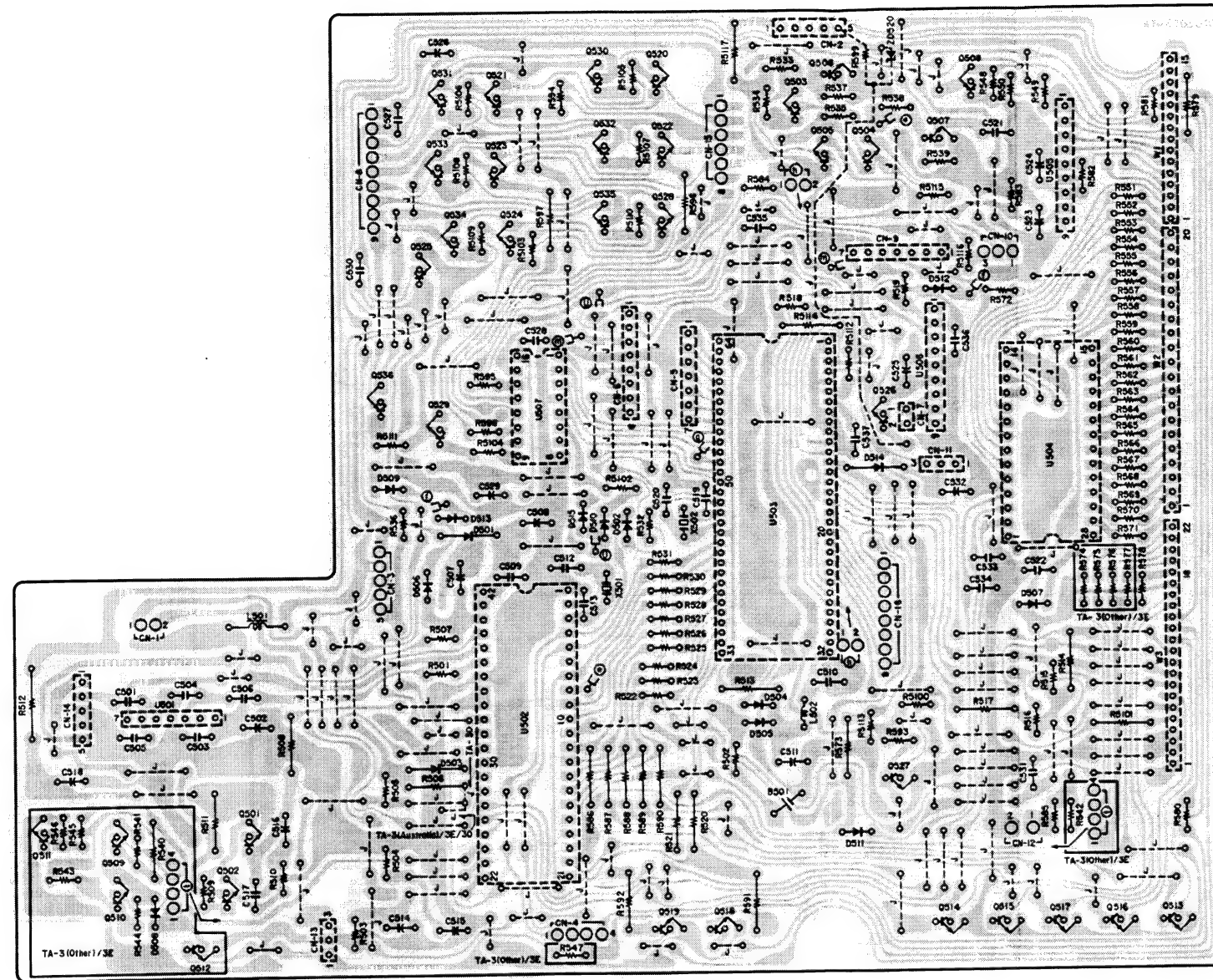


Fig. 6.17

6.18. Main P.C.B. Ass'y

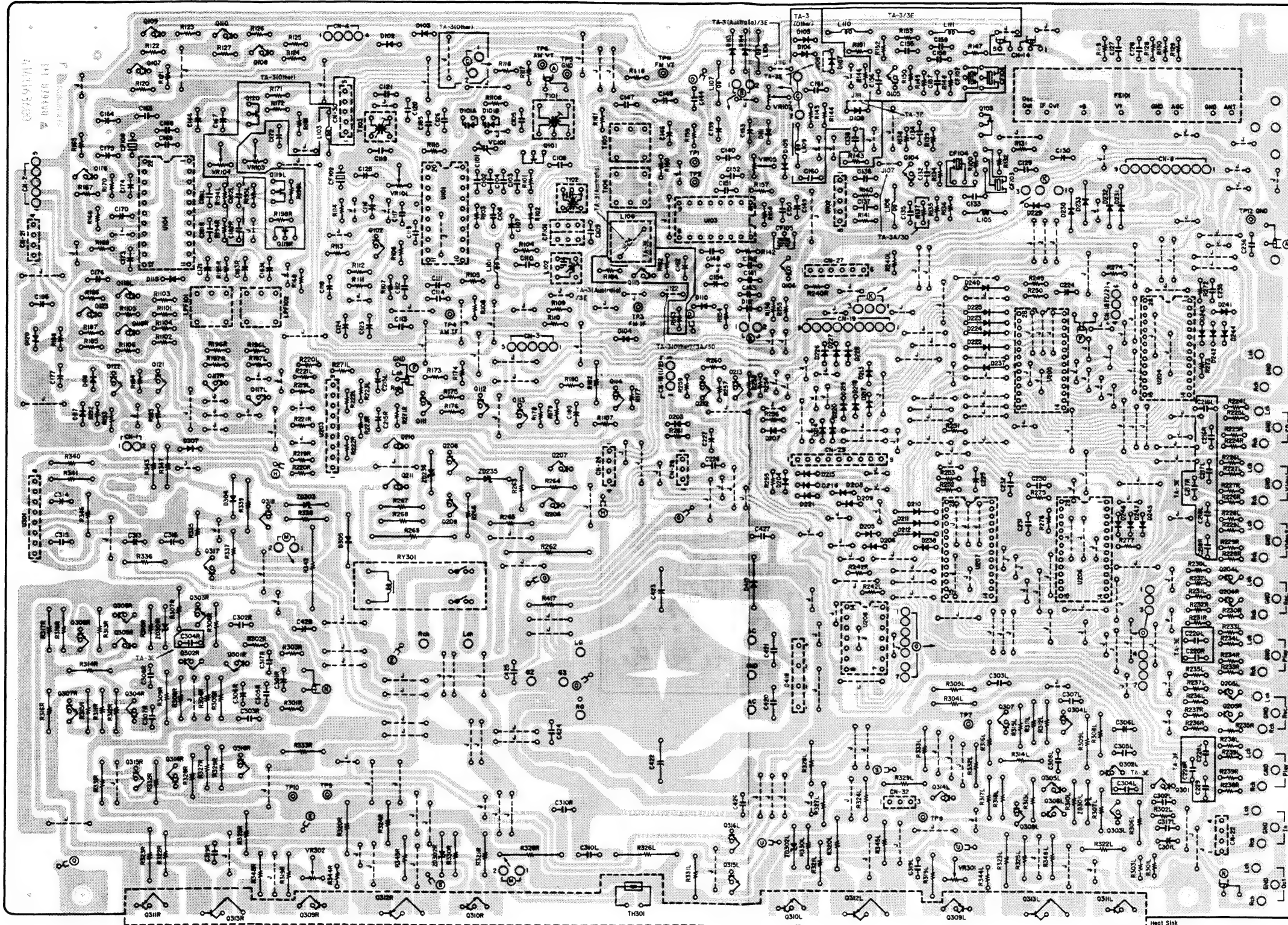


Fig. 6.18

Schematic Ref. No.	Part No.	Description
6.18. Main P.C.B. Ass'y		
	BA07419A	Main P.C.B. Ass'y (TA-3 (Other))
	BA07420A	Main P.C.B. Ass'y (TA-3 (Australia))
	BA07417A	Main P.C.B. Ass'y (TA-3A)
	BA07421A	Main P.C.B. Ass'y (TA-3E)
	BA07418A	Main P.C.B. Ass'y (TA-30)
	OB60634A	Main P.C.B.
U101	OB11243A	IC LA1247
U102	OB11156A	IC TA7060AP
U103	OB11157A	IC LA1235
U104	OB11245A	IC LA3400N
U203	OB11050A	IC NJM4558S
U204,205	OB11514A	IC LC7816
U206,207	OB11514A	IC LC7816
U208	OB11056A	IC LC4966
U301	OB11246A	IC μ PC1237H
Q101	OB06129A	FET 2SK117 (Y)
Q102	OB06100A	TR 2SC945 (K,P,Q)
Q103	OB10127A	FET 2SK241 (GR)
Q104	OB06115A	TR 2SC1675
Q105	OB06115A	TR 2SC1675 (TA-3/3E)
Q106	OB06100A	TR 2SC945 (K,P,Q)
Q107	OB10097A	TR 2SA952
Q108	OB06100A	TR 2SC945 (K,P,Q)
Q109	OB10097A	TR 2SA952
Q110,111	OB06100A	TR 2SC945 (K,P,Q)
Q112,113	OB06100A	TR 2SC945 (K,P,Q)
Q114	OB06013A	TR 2SA733 (P,Q)
Q115	OB06100A	TR 2SC945 (K,P,Q) (TA-3 (Australia)/3E)
Q116	OB06100A	TR 2SC945 (K,P,Q)
Q117L,R	OB06299A	TR 2SC2878
Q118L,R	OB06013A	TR 2SA733 (P,Q)
Q119L,R	OB10151A	FET 2SK364 (TA-3 (Other))
Q120	OB10151A	FET 2SK364 (TA-3 (Other))
Q121,122	OB06100A	TR 2SC945 (K,P,Q)
Q123	OB06013A	TR 2SA733 (P,Q)
Q204L,R	OB06299A	TR 2SC2878
Q205L,R	OB06299A	TR 2SC2878
Q206	OB10248A	TR 2SD313 (E)
Q207	OB10267A	TR 2SD1408
Q208	OB06013A	TR 2SA733 (P,Q)
Q209	OB06100A	TR 2SC945 (K,P,Q)
Q210	OB10266A	TR 2SB1017
Q211	OB10264A	TR 2SB507 (E)
Q212	OB06100A	TR 2SC945 (K,P,Q)
Q213	OB06013A	TR 2SA733 (P,Q)
Q301L,R	OB06142A	TR 2SC2240 (BL)
Q302L,R	OB06142A	TR 2SC2240 (BL)
Q303L,R	OB06142A	TR 2SC2240 (BL)
Q304L,R	OB10204A	TR 2SA1145
Q305L,R	OB10205A	TR 2SC2705
Q306L,R	OB06142A	TR 2SC2240 (BL)
Q307L,R	OB10205A	TR 2SC2705
Q308L,R	OB10204A	TR 2SA1145
Q314L,R	OB10050A	TR 2SA970 (BL)
Q315L,R	OB10205A	TR 2SC2705
Q316L,R	OB10050A	TR 2SA970 (BL)
Q317	OB06322A	TR 2SC2002
Q318	OB06372A	TR 2SA953
ZD235,236	OB12627A	ZD 18V RD18EB2
ZD301L,R	OB06298A	ZD 8.2V RD8.2EB2
ZD302L,R	OB12614A	ZD 12V RD12EB2
ZD303	OB12614A	ZD 12V RD12EB2
D101	OB12606A	Varicap KV1236Z1
D102,103	OB06398A	SID 1SS176
D104	OB06398A	SID 1SS176
D105,106	OB06398A	SID 1SS176 (TA-3 (Other))
D107,108	OB06398A	SID 1SS176 (TA-3 (Other))
D109,110	OB06398A	SID 1SS176
D111,112	OB06398A	SID 1SS176
D113,114	OB12584A	SID 1N4148
D115	OB06398A	SID 1SS176
D117,118	OB06398A	SID 1SS176
D120	OB06398A	SID 1SS176

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
D203,204	OB06398A	SiD 1SS176	R121	OB09701A	RK 10K 1/6W J	R221L,R	OB09725A	RK 100K 1/6W J	R345L,R	OB24215A	RC 0.47 5W	C216L,R	OB05550A	CML 1000P 50V J (TA-3E)	O-O	OB83518A	Ribbon Wire 7P 120
D205,206	OB06398A	SiD 1SS176	R122	OB09717A	RK 47K 1/6W J	R222L,R	OB09725A	RK 100K 1/6W J	R346	OB09391A	RK 91K 1/4W J	C217L,R	OB05550A	CML 1000P 50V J (TA-3E)	Q-Q	OB83527A	Lead Wire 180
D207,208	OB06398A	SiD 1SS176	R123,124	OB09701A	RK 10K 1/6W J	R223L,R	OB09657A	RK 150K 1/6W J	R347	OB01889A	RK 100K 1/4W J			CML 1000P 50V J (TA-3E)	S-S	OB83525A	Lead Wire 160 (TA-3/3A/3E)
D209	OB06398A	SiD 1SS176	R125,126	OB09701A	RK 10K 1/6W J	R224L,R	OB09645A	RK 47 1/6W J	R348L,R	OB24215A	RC 0.47 5W			CML 1000P 50V J (TA-3E)		OB83535A	Lead Wire 160 (TA-30)
D210,211	OB12584A	SiD 1N4148	R127	OB09701A	RK 10K 1/6W J	R225L,R	OB09719A	RK 56K 1/6W J	R417	OB05615A	RK 22K 1/4W J	C218L,R	OB05550A	CML 1000P 50V J (TA-3E)	U-U	OB83538A	Lead Wire 80
D212	OB12584A	SiD 1N4148	R128	OB09725A	RK 100K 1/6W J	R226L,R	OB09645A	RK 47 1/6W J	R1101,1102	OB09695A	RK 5.6K 1/6W J	C220L,R	OB05550A	CML 1000P 50V J (TA-3E)		OB80208A	Glass Tube 10mm (28)
D213,214	OB06398A	SiD 1SS176	R129	OB09727A	RK 120K 1/6W J	R227L,R	OB09719A	RK 56K 1/6W J	R1103,1104	OB09701A	RK 10K 1/6W J			CE 2.2μ 50V		OB80209A	Glass Tube 16mm (4)
D215,216	OB06398A	SiD 1SS176	R130	OB09721A	RK 68K 1/6W J	R228L,R	OB09645A	RK 47 1/6W J	R1105,1106	OB09701A	RK 10K 1/6W J	C224,225	OB09372A	CC 0.1μ 50V Z		OB80210A	Glass Tube 10mm (2)
D217,218	OB06398A	SiD 1SS176	R131	OB09745A	RK 680K 1/6W J	R229L,R	OB09719A	RK 56K 1/6W J	R1107,1108	OB09725A	RK 100K 1/6W J	C227	OB01527A	CC 22μ 25V		OB81977A	ANT Terminal F (1)
D219,220	OB06398A	SiD 1SS176	R132	OB09661A	RK 220 1/6W J	R230L,R	OB09661A	RK 220 1/6W J	VC101	OB42010A	C Trimmer 10P	C228	OB09288A	CC 1000P 50V K		OB81981A	4P Pin Jack (5)
D221	OB06398A	SiD 1SS176	R133	OB09667A	RK 390 1/6W J	R231L,R	OB09725A	RK 100K 1/6W J	C101	OB09288A	CC 1000P 50V K	C229	OB09291A	CC 0.022μ 50V Z		OB83547A	4P Pin Jack (1)
D222,223	OB12584A	SiD 1N4148	R134	OB09698A	RM 7.5K 1/6W F	R232L,R	OB09717A	RK 47K 1/6W J	C102,103	OB09291A	CC 0.022μ 50V Z			CC 0.1μ 50V Z			
D224,225	OB12584A	SiD 1N4148	R135	OB09686A	RM 2.4K 1/6W F	R233L,R	OB09645A	RK 47 1/6W J	C104	OB09288A	CC 1000P 50V K	C230	OB09291A	CC 0.022μ 50V Z			
D226,227	OB06398A	SiD 1SS176	R136	OB09686A	RK 330 1/6W J	R234L,R	OB09719A	RK 56K 1/6W J	C105,106	OB09291A	CC 0.022μ 50V Z	C231,232	OB09291A	CC 0.1μ 50V Z			
D228,229	OB06398A	SiD 1SS176	R137	(TA-3/30)		R235L,R	OB09661A	RK 220 1/6W J	C107	OB01403A	CE 47μ 16V	C235	OB09291A	CC 0.022μ 50V Z			
D230	OB12584A	SiD 1N4148	R138	OB09645A	RK 47 1/6W J	R236L,R	OB09725A	RK 100K 1/6W J	C108	OB09291A	CC 0.022μ 50V Z	C236	OB01780A	CML 0.01μ 50V J (TA-3/3A/30)			
D231,232	OB12584A	SiD 1N4148	R139	OB09667A	RK 390 1/6W J	R237L,R	OB09717A	RK 47K 1/6W J	C109	OB41908A	CC 82P 50V J			CC 0.1μ 50V Z			
D233	OB12584A	SiD 1N4148	R140,141	OB09667A	RK 390 1/6W J	R238L,R	OB09645A	RK 47 1/6W J	C110	OB09291A	CC 0.022μ 50V Z			CC 0.022μ 50V Z			
D237	OB12584A	SiD 1N4148	R142	OB09665A	RK 330 1/6W J	R239L,R	OB09719A	RK 56K 1/6W J	C111	OB09288A	CC 1000P 50V K			CML 1000P 50V J (TA-3E)			
D238	OB06398A	SiD 1SS176	R143	OB09689A	RK 3.3K 1/6W J	R240L,R	OB09733A	RK 220K 1/6W J	C112	OB05582A	CML 0.022μ 50V J			CC 0.1μ 50V Z			
D240	OB12584A	SiD 1N4148		(TA-3 (Other))		R242L,R	OB09675A	RK 1.2K 1/6W J	C113	OB01802A	CML 2200P 50V J			CC 0.022μ 50V Z			
D241,242	OB06398A	SiD 1SS176	R144	OB09665A	RK 330 1/6W J	R249	OB09733A	RK 220K 1/6W J	C114	OB05685A	CML 0.082μ 50V J	C301L,R	OB09148A	CE 10μ 25V (LN)			
D243,244	OB06398A	SiD 1SS176		(TA-3 (Other))		R250,251	OB09705A	RK 15K 1/6W J	C115	OB09290A	CC 0.01μ 50V Z	C302L,R	OB41213A	CCP 330P 100V J			
D245,246	OB06398A	SiD 1SS176	R145,146	OB09693A	RK 4.7K 1/6W J	R252	OB09725A	RK 100K 1/6W J	C116	OB40025A	CE 0.47μ 50V	C303L,R	OB05652A	CML 4700P 50V J			
D247	OB06398A	SiD 1SS176		(TA-3 (Other))		R253	OB09733A	RK 220K 1/6W J	C117	OB09291A	CC 0.022μ 50V Z	C304L,R	OB09286A	CC 470P 50V J (TA-3E)			
D304	OB12584A	SiD 1N4148	R147,148	OB09665A	RK 330 1/6W J	R254	OB09717A	RK 47K 1/6W J	C118	OB01403A	CE 47μ 16V			CML 0.1μ 50V J			
D305	OB12586A	SiD 1N4002		(TA-3/3E)		R255,256	OB09705A	RK 15K 1/6W J	C119	OB09291A	CC 0.022μ 50V Z	C305L,R	OB05681A	CC 0.022μ 50V J			
D307	OB06398A	SiD 1SS176	R149	OB09698A	RK 7.5K 1/6W J	R257	OB09717A	RK 47K 1/6W J	C120	OB41896A	CSP 390P 50V J	C306L,R	OB40434A	CC 220μ 25V (LN)			
D418	OB12626A	SiD KBU6D		(TA-3/3E)		R258,259	OB09701A	RK 10K 1/6W J	C121	OB41489A	CC 2P 50V J	C307L,R	OB09279A	CC 22P 50V K			
D419	OB12586A	SiD 1N4002	R150	OB09689A	RK 3.3K 1/6W J	R260	OB09713A	RK 33K 1/6W J	C123,124	OB40029A	CE 4.7μ 50V	C308L,R	OB09279A	CC 22P 50V K			
CF101	OB41897A	Ceramic Filter SFZ450G3L	R151	OB09671A	RK 560 1/6W J	R261	OB09727A	RK 120K 1/6W J	C125	OB09372A	CE 2.2μ 50V	C310L,R	OB01780A	CML 0.1μ 50V J			
CF102	OB41898A	Ceramic Filter BFU450C4N	R152	OB09646A	RK 51 1/6W J	R262	OB24204A	RF 220 2W	C126	OB09291A	CC 0.022μ 50V Z	C313	OB09372A	CE 2.2μ 50V			
CF103,104	OB41918A	Ceramic Filter SFE10.7MLA	R153	OB09677A	RK 1K 1/6W J	R263	OB05622A	RK 2.2K 1/4W J	C127	OB09387A	CC 0.47μ 50V Z	C314	OB01400A	CE 100μ 16V			
CF105	OB41918A	Ceramic Filter SFE10.7MLA		(TA-3/3E)		R264	OB05794A	RK 680 1/4W J	C128,129	OB09291A	CC 0.022μ 50V Z	C315	OB40250A	CE 100μ 16V (BP)			
CF106,107	OB41928A	Ceramic Filter SFE10.7MLA	R154,155	OB09677A	RK 1K 1/6W J	R265	OB05622A	RK 2.2K 1/4W J	C130	OB40079A	CE 220μ 16V	C316	OB01674A	CE 10μ 25V			
CF108	OB41927A	Ceramic Resonator CSB456F11	R156	OB09717A	RK 47K 1/6W J	R266,267	OB05622A	RK 2.2K 1/4W J	C132	OB09291A	CC 0.022μ 50V Z	C317L,R	OB05681A	CML 0.01μ 50V J			
T101	OB51269A	Coil AM ANT	R157	OB09701A	RK 10K 1/6W J	R268	OB05794A	RK 680 1/4W J	C133,134	OB09291A	CC 0.022μ 50V Z	C319L,R	OB41176A	CML 0.22μ 63V J			
T102	OB51271A	Coil AM IFT	R158	OB09719A	RK 56K 1/6W J	R269	OB24204A	RF 220 2W	C135,136	OB09291A	CC 0.022μ 50V Z	C420,421	OB41901A	CC 0.047μ 500V Z			
T103	OB51270A	Coil AM OSC	R159	OB09705A	RK 15K 1/6W J	R270	OB09733A	RK 220K 1/6W J	C137,138	OB09291A	CC 0.022μ 50V Z	C422,423	OB40519A	CC 10000μ 63V			
T104	OB51293A	Coil FM DET A	R160	OB09700A	RK 9.1K 1/6W J	R271L,R	OB09725A	RK 100K 1/6W J	C139	OB09291A	CC 0.022μ 50V Z	C424,425	OB41476A	CML 0.1μ 63V J			
T105	OB51294A	Coil FM DET B	R161	OB09683A	RM 1.8K 1/6W F	R272	OB09733A	RK 220K 1/6W J	C140,141	OB09291A	CC 0.022μ 50V Z	C426,427	OB41476A	CML 0.1μ 63V J			
L101	OB51274A	Coil 22μH	R162	OB09745A	RK 680K 1/6W J	R273	OB09725A	RK 100K 1/6W J	C142,143	OB09291A	CC 0.022μ 50V Z	C428	OB40029A	CE 4.7μ 50V			
L102	OB51292A	Coil AM IFT(A)	R163	OB09693A	RK 4.7K 1/6W J	R274	OB09733A	RK 220K 1/6W J	C144	OB09291A	CC 0.022μ 50V Z	RY301	OB90331A	Relay VB 24V			
L103	OB51274A	Coil 22μH	R164	OB09687A	RK 2.7K 1/6W J	R275	OB09725A	RK 100K 1/6W J	C145	OB01405A	CE 1μ 50V	FE101	OB91027A	Front End (TA-3/3A)			
L104,105	OB51274A	Coil 22μH		(TA-3 (Australia)/3E)		R276	OB09733A	RK 220K 1/6W J	C146	OB40080A	CE 330μ 16V			Front End (TA-30)			
L106,107	OB51274A	Coil 22μH		(TA-3 (Australia)/3E)		R277	OB09705A	RK 15K 1/6W J	C147	OB09291A	CC 0.022μ 50V Z			Front End (TA-3E)			
L108	OB51289A	L.P. Filter	R165	OB09717A	RK 47K 1/6W J	R301L,R	OB09733A	RK 220K 1/6W J	C148	OB41735A	CC 100P 50V J	CN1	OB83491A	2P Connector Ass'y 300			
L109	OB51274A	Coil 22μH	R166	OB09701A	RK 10K 1/6W J	R302L,R	OB09669A	RK 470 1/6W J	C149	OB01405A	CE 1μ 50V	CN2	OB83500A	5P Connector Ass'y 300			
L110,111	OB51274A	Coil 22μH	R167	OB09717A	RK 47K 1/6W J	R303L,R	OB22635A	RM 1.21K 1/4W F	C150,151	OB09291A	CC 0.022μ 50V Z	CN3	OB83501A	5P Connector Ass'y 200			
L111,112	OB09701A	RK 10K 1/6W J	R168	OB09721A	RK 68K 1/6W J	R304L,R	OB09653A	RK 100 1/6W J	C152	OB09291A	CC 0.022μ 50V Z	CN4	OB83495A	4P Connector Ass'y 150			
VR101	OB32130A	Semi VR 100K	R169	OB09669A	RK 470 1/6W J	R305L,R	OB01683A	RK 15K 1/4W J	C153	OB40029A	CE 4.7μ 50V	CN8	OB83679A	9P Connector Ass'y 300			
VR102	OB32127A	Semi VR 10K	R170	OB09689A	RK 3.3K 1/6W J	R306L,R	OB05691A	RK 390 1/4W J	C154	OB09372A	CE 2.2μ 50V	CN14	OB83499A	5P Connector Ass'y 200			
VR103	OB32130A	Semi VR 100K	R171	OB09749A	RK 1M 1/6W J	R307L,R	OB22250A	RM 1.60K 1/4W F	C155,156	OB09291A	CC 0.022μ 50V Z	CN18	OB83682A	6P Connector Ass'y 300			
VR104	OB32130A	Semi VR 100K		(TA-3 (Other))		R308L,R	OB20518A	RK 22K 1/2W J	C157,158	OB09291A	CC 0.022μ 50V Z	CN19	OB83677A	9P Connector Ass'y 250			
VR105	OB32129A	Semi VR 50K	R172	OB09725A	RK 100K 1/6W J	R309L,R	OB01846A	RK 4.7K 1/4W J	C159	OB09291A	CC 0.022μ 50V Z	CN21	OB81761A	4P-T Post EH-4P			
VR301,302	OB32126A	Semi VR 5K	R173	OB09701A	RK 10K 1/6W J	R310L,R	OB05959A	RF 75 1/4W J	C160	OB09291A	CC 0.022μ 50V Z	CN22	OB81761A	4P-T Post EH-4P			
R100	OB09681A	RK 1.5K 1/6W J	R174,175	OB09701A	RK 10K 1/6W J	R311L,R	OB24218A	RK 2.2K 1/4W J	C161	OB09291A	CC 0.022μ 50V Z	CN24	OB81761A	4P-T Post EH-4P			
R101	OB09665A	RK 330 1/6W J	R176,177	OB09717A	RK 47K 1/6W J	R312L,R	OB01933A	RK 220 1/4W J	C162	OB01674A	CE 10μ 25V	CN27	OB81763A	6P-T Post			
R102	OB09661A	RK 220 1/6W J	R178,179	OB09701A	RK 10K 1/6W J	R313L,R	OB09560A	RM 39K 1/4W F	C164	OB40080A	CE 330μ 16V	CN28	OB81760A	3P-T Post			
R103	OB09681A	RK 1.5K 1/6W J	R180	OB09701A	RK 10K 1/6W J	R314L,R	OB24214A	RF 75 1/4W J	C165	OB09291A	CC 0.022μ 50V Z	CN29	OB81766A	9P-T Post			
R104	OB09685A	RK 2.2K 1/6W J	R181	OB09725A	RK 100K 1/6W J	R315L,R	OB24212A	RF 10 1/2W J	C166,167	OB09287A	CC 680P 50V K	CN30	OB81762A	5P-T Post			

7. SCHEMATIC DIAGRAMS

7.1. IC Block Diagrams

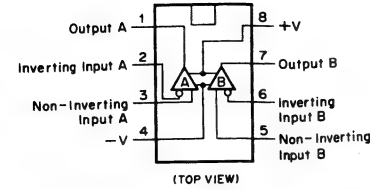


Fig. 7.1.1 Operational Amp. IC NJM4558DD, 072DE

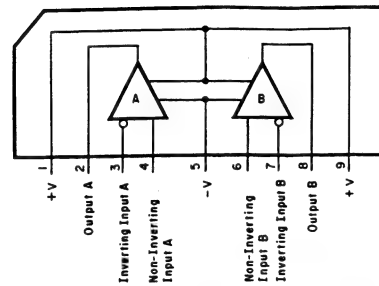


Fig. 7.1.2 Operational Amp. IC NJM4558S, μPC4570HA

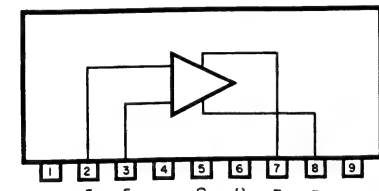


Fig. 7.1.3 Volume Motor Driver IC BA6208

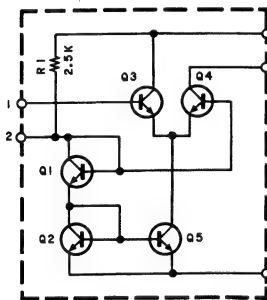


Fig. 7.1.4 FM IF Amp. IC TA7060AP

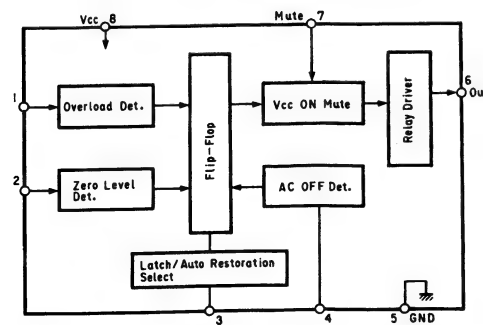


Fig. 7.1.5 Power Amp. Protector IC μPC1237H

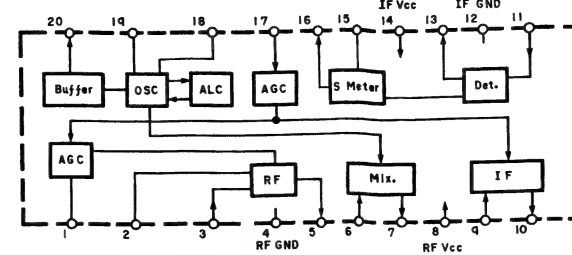


Fig. 7.1.6 AM Tuner IC LA1247

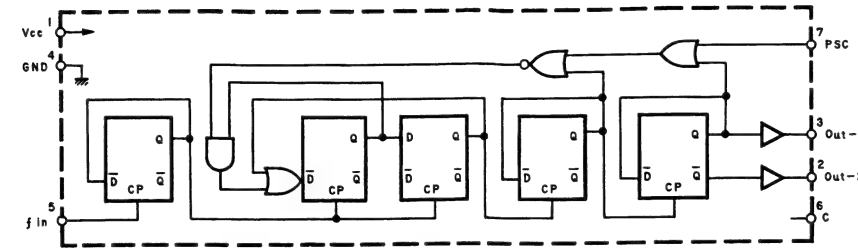


Fig. 7.1.7 ECL Prescaler (FM) IC TD6104P

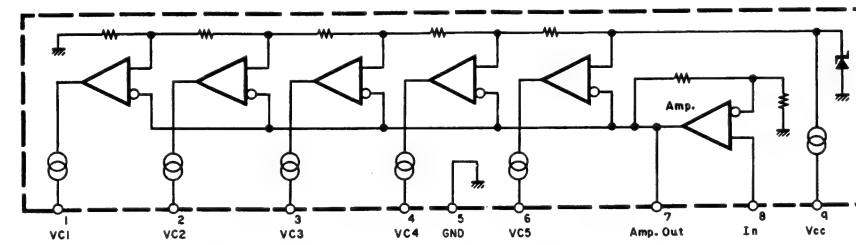


Fig. 7.1.8 Signal Meter Driver IC LB1413N

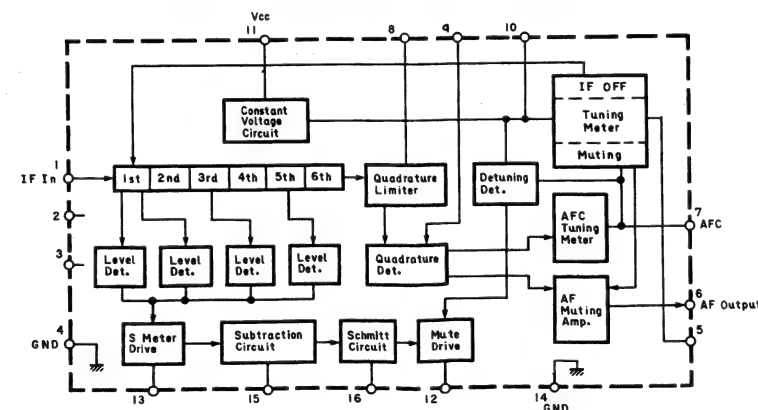


Fig. 7.1.9 FM IF Amp. & Detector IC LA1235

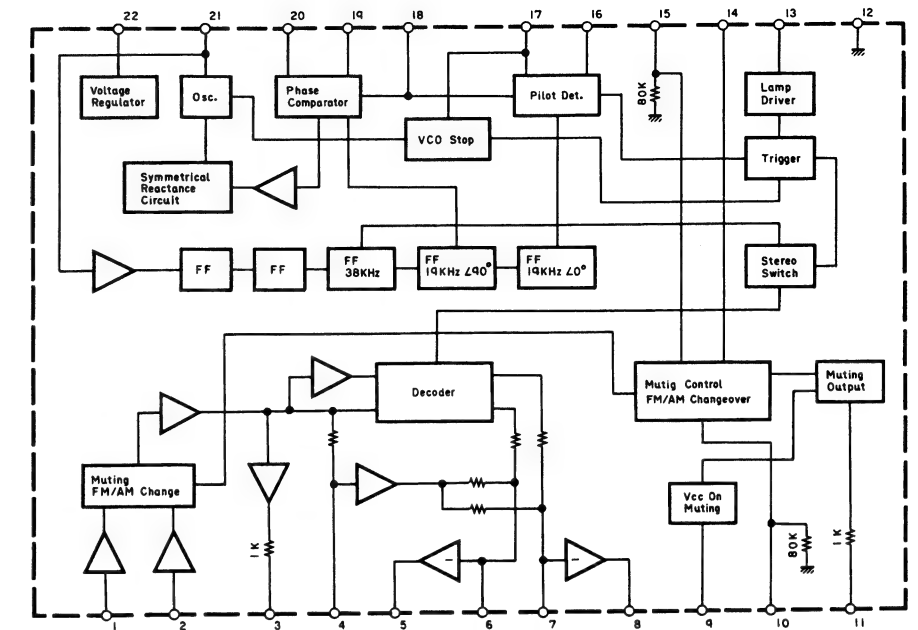


Fig. 7.1.10 PLL FM MPX Demodulator IC LA3400N

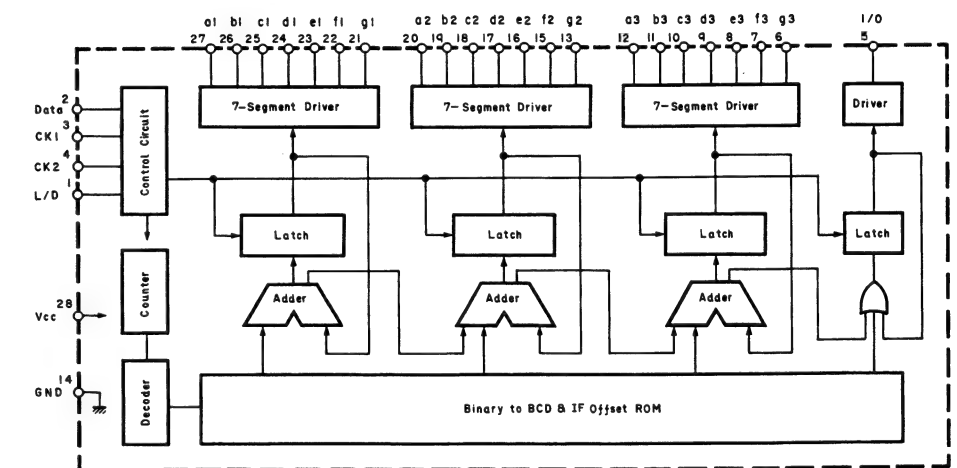


Fig. 7.1.11 Display Driver IC TD6301AP

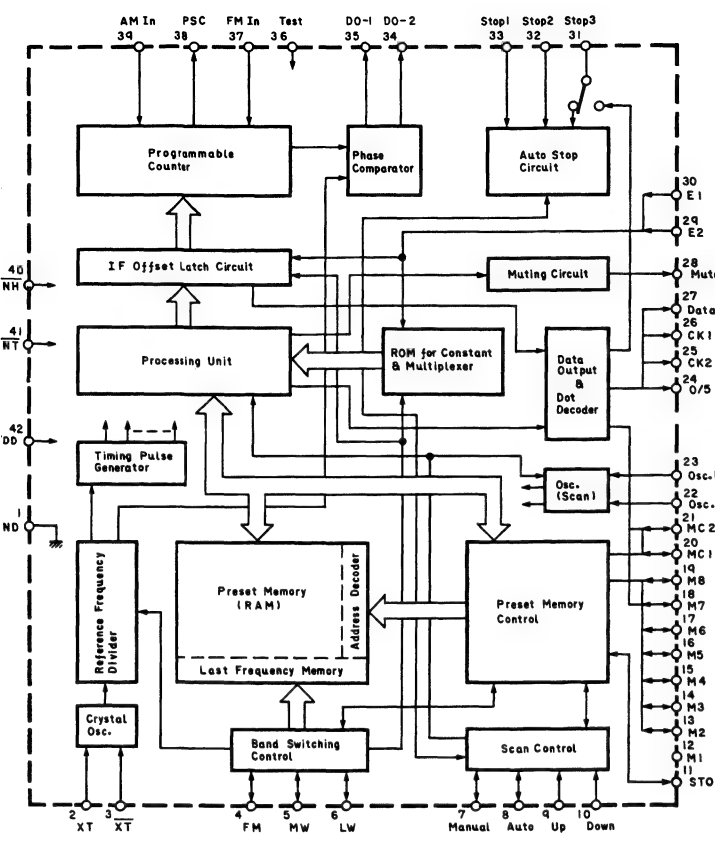


Fig. 7.1.12 PLL Synthesizer IC TC9147BP

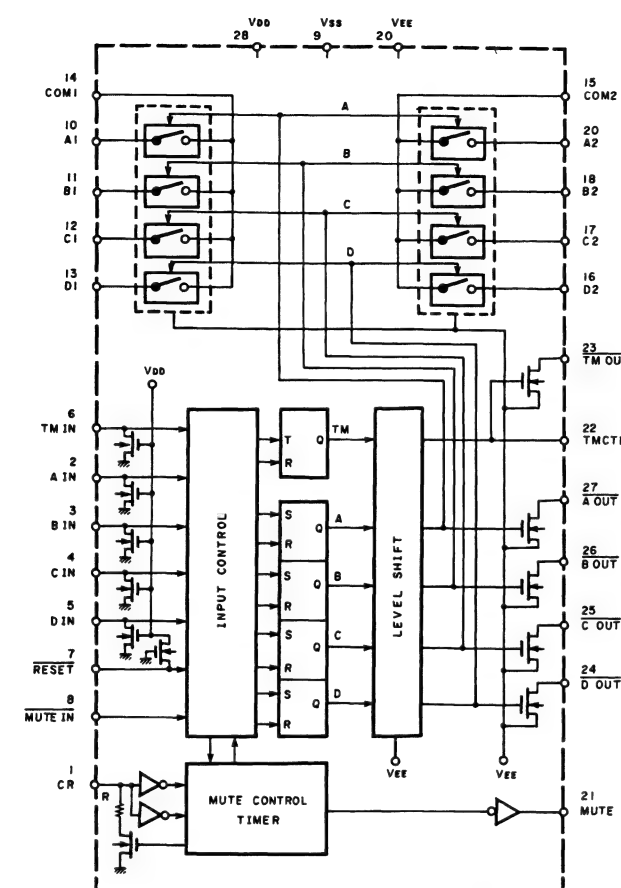


Fig. 7.1.14 Analog Function Switch LC7816

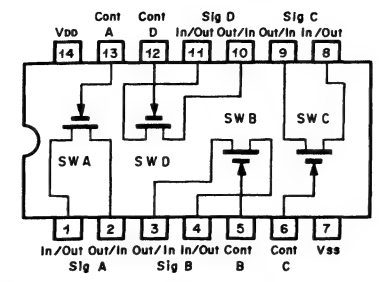


Fig. 7.1.15 Bilateral Switch IC TC4066BP, LC4966

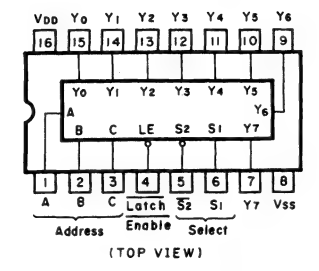
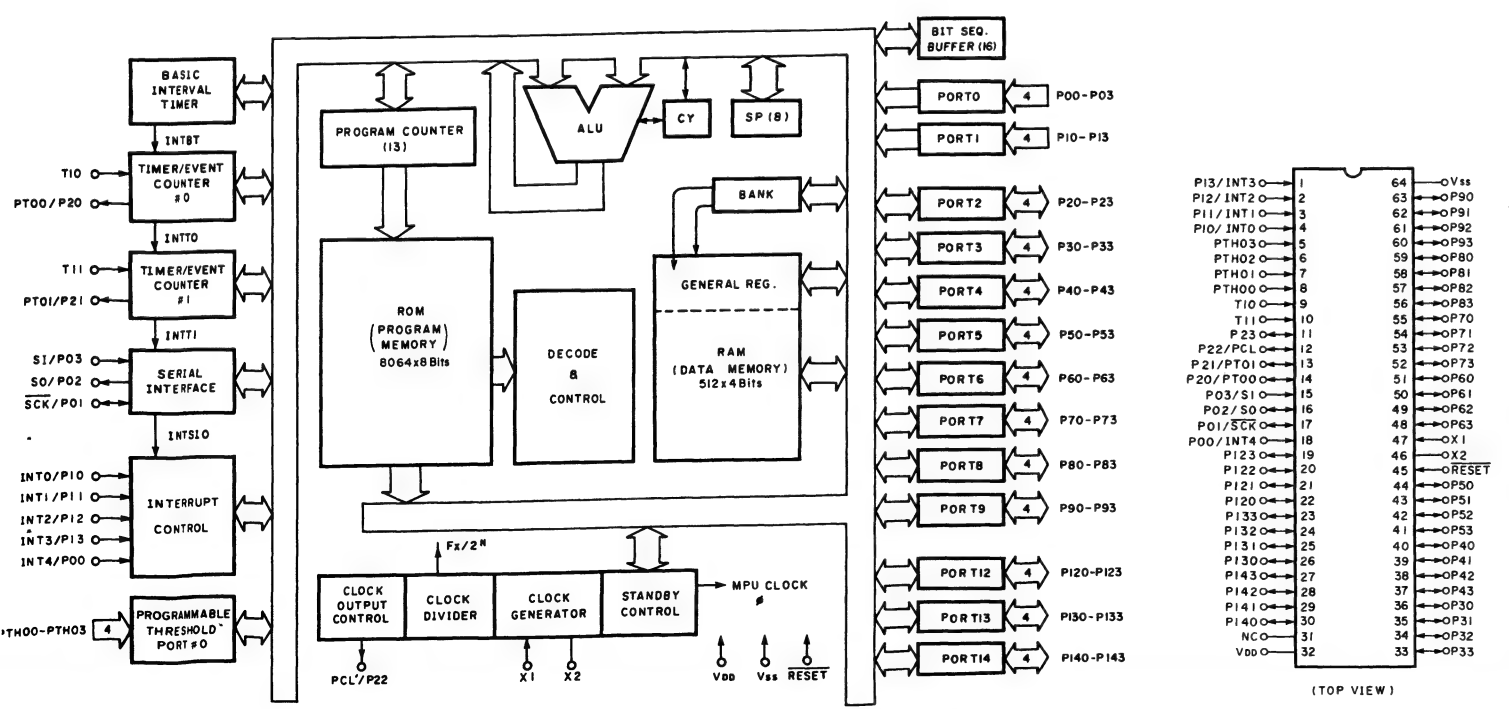


Fig. 7.1.16 3-to-8 Line Decoder IC μPD74HC237C



7.2.2. Tuner Section

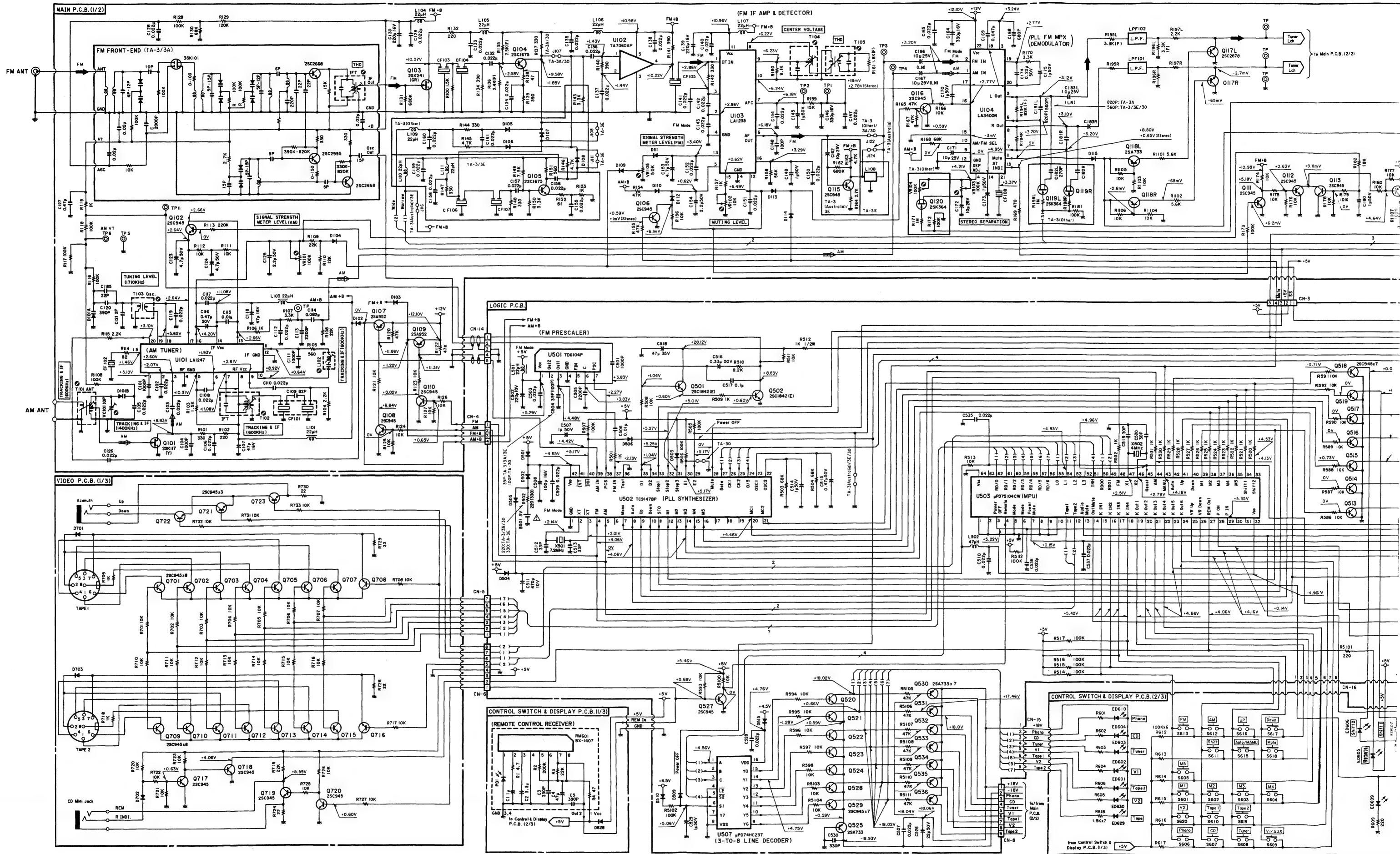


Fig. 7.2.2

7.2.3. Amplifier Section

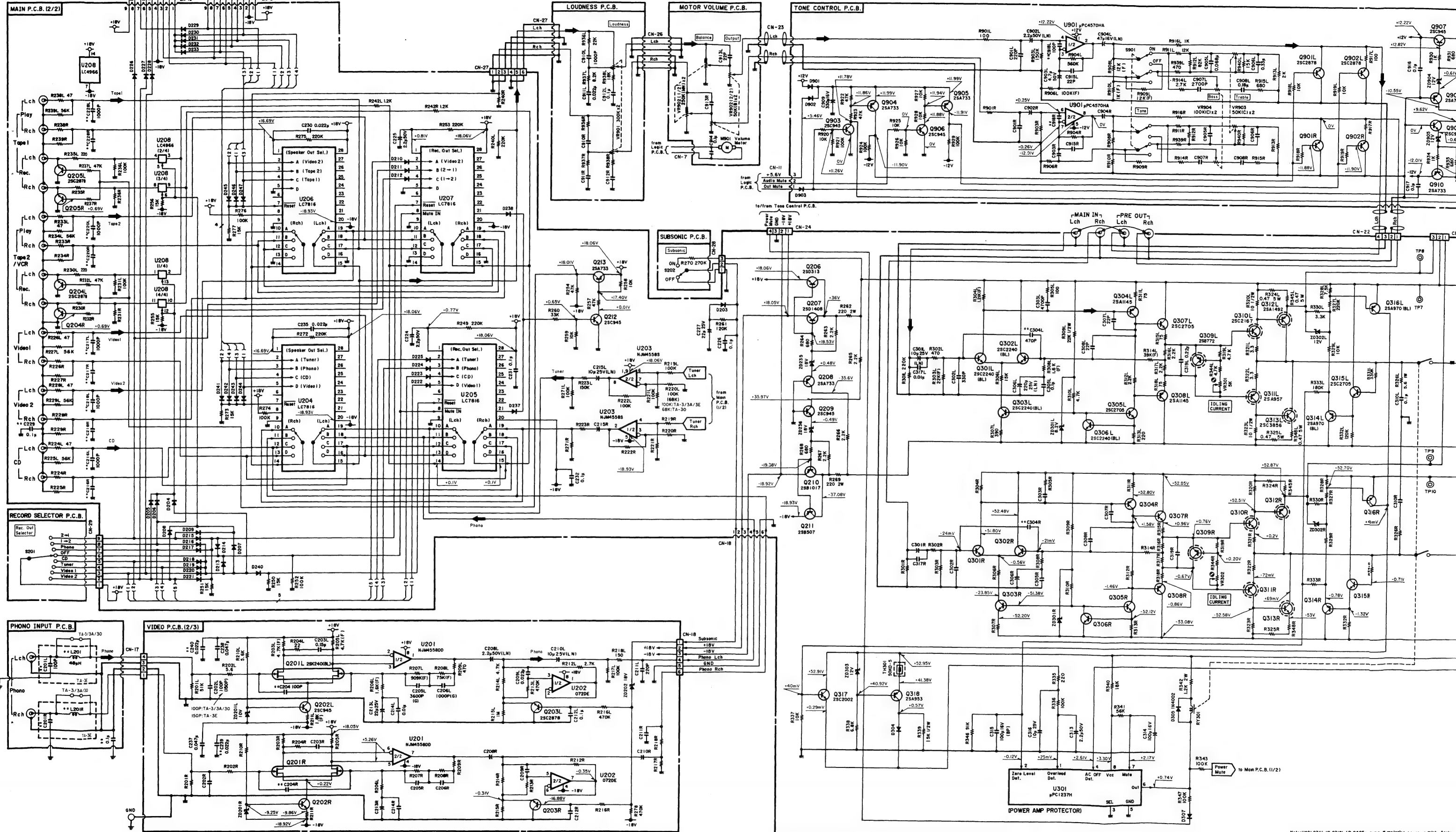
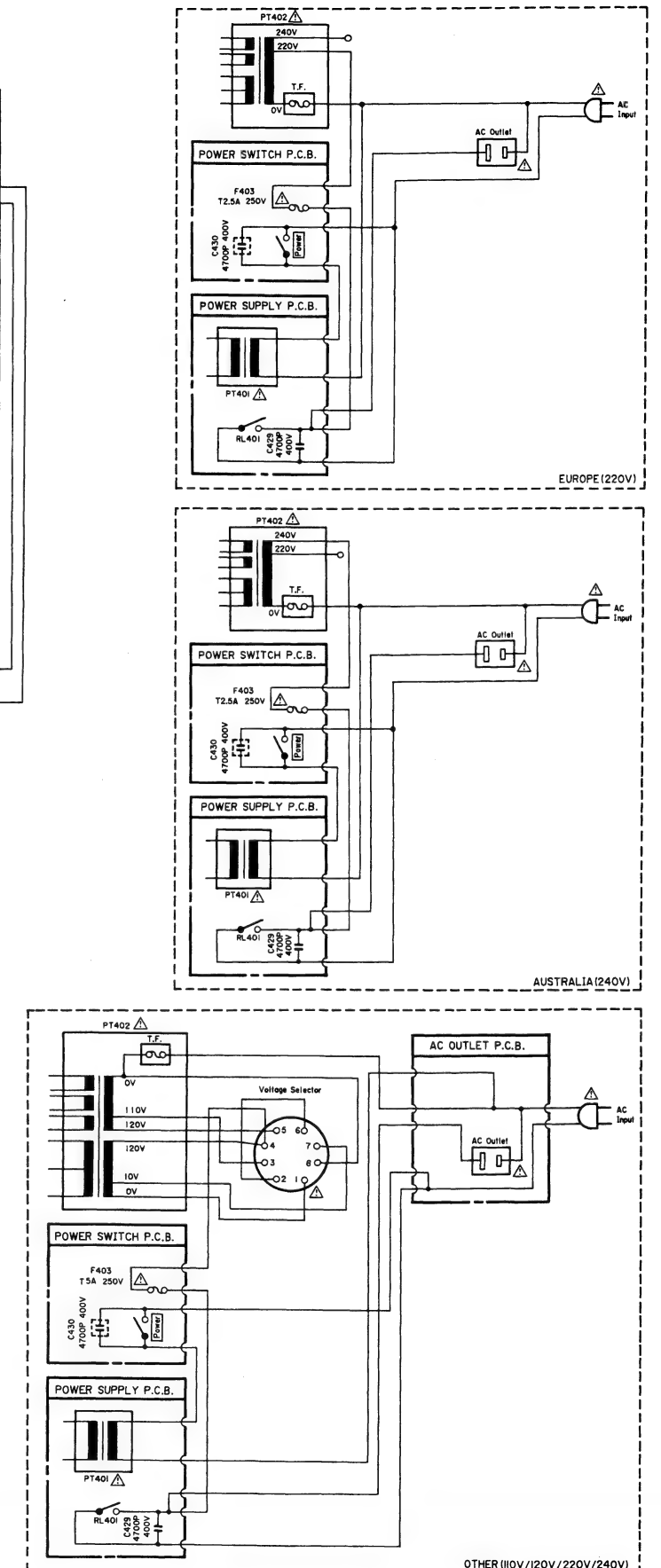


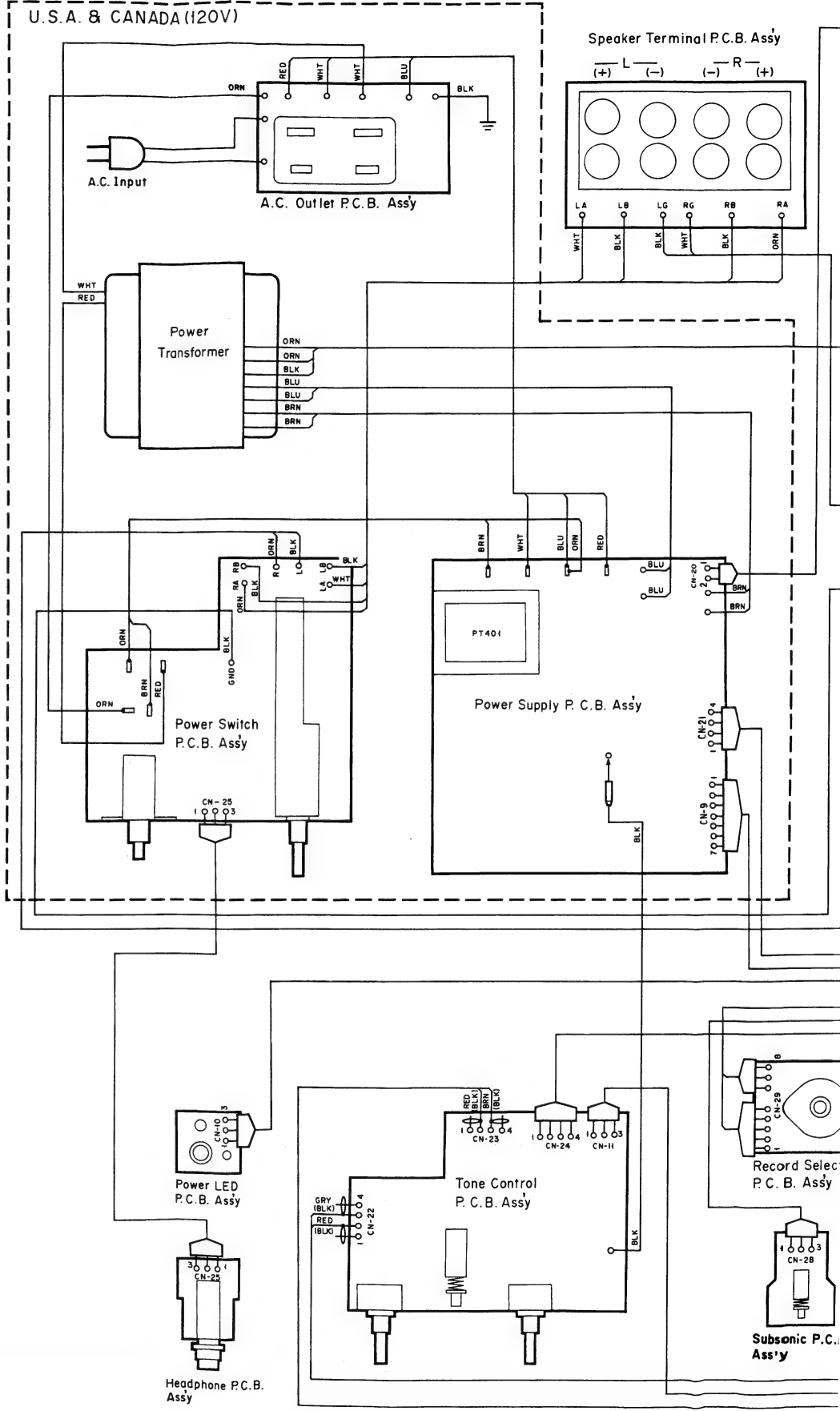
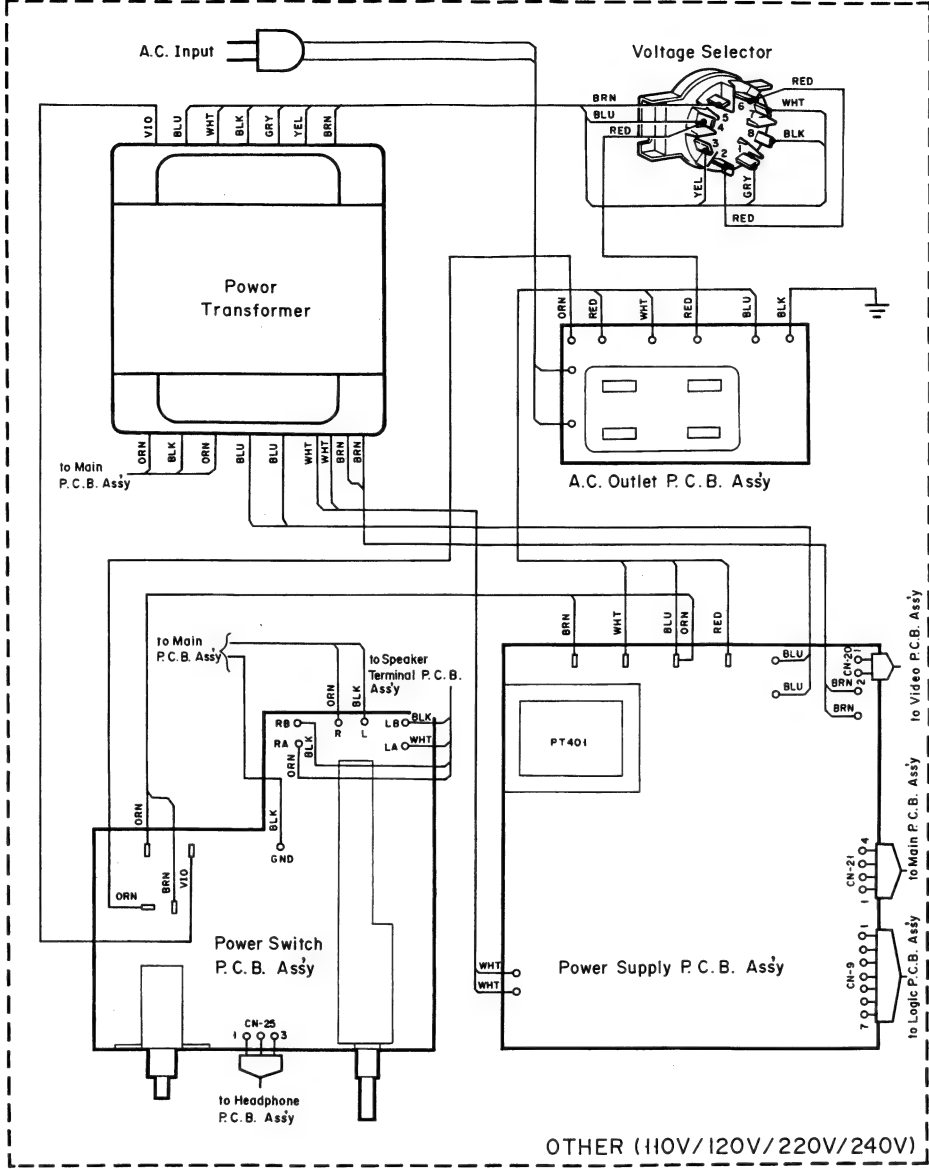
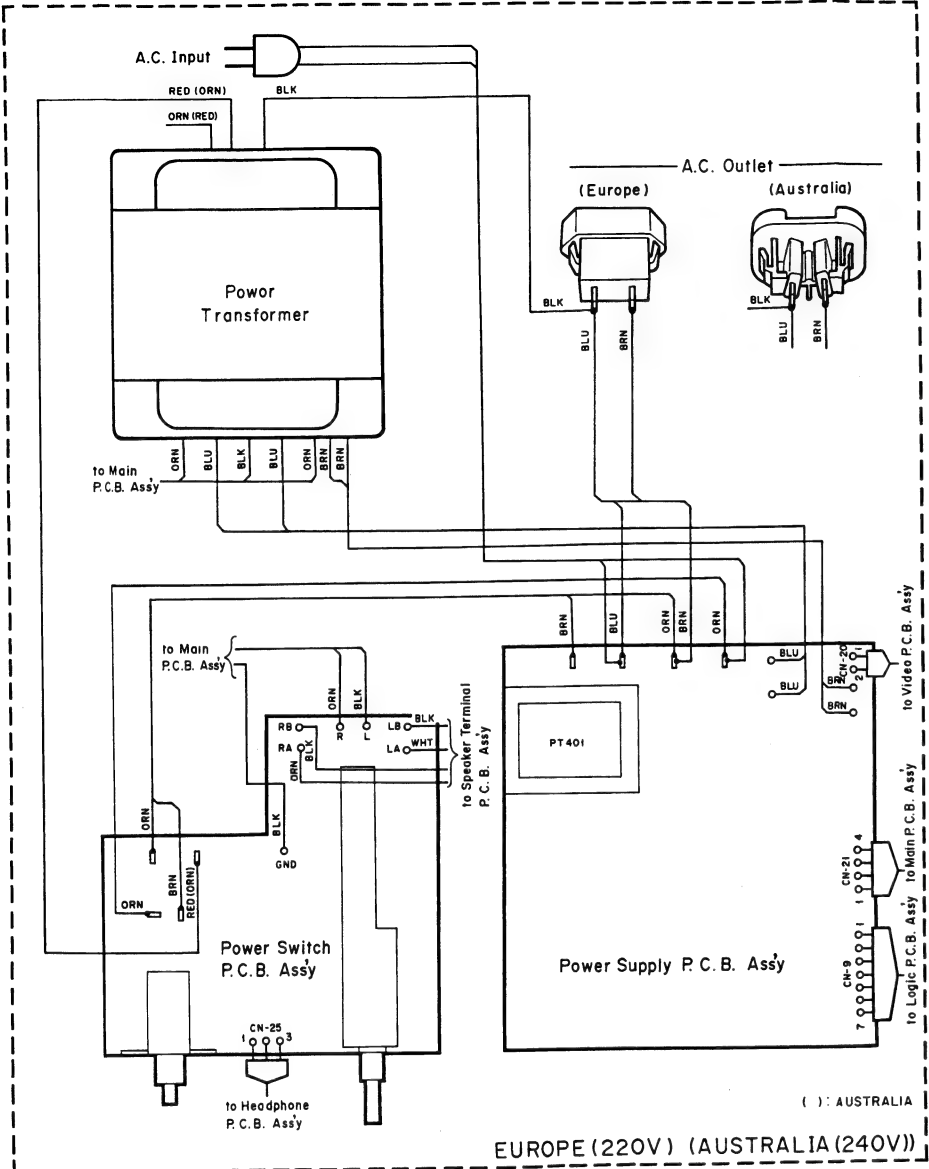
Fig. 7.2.3

It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedures.



10

8. WIRING DIAGRAM



- Notes: 1. Table of wire colors
BRN — Brown BLU — Blue
RED — Red VIO — Violet
ORN — Orange GRY — Gray
YEL — Yellow WHT — White
GRN — Green BLK — Black
2. Component side view of the P.C.B. is illustrated unless otherwise specified.
3. Wire tube color is shown in ().

Fig. 8

U.S.A. & CANADA (120V)

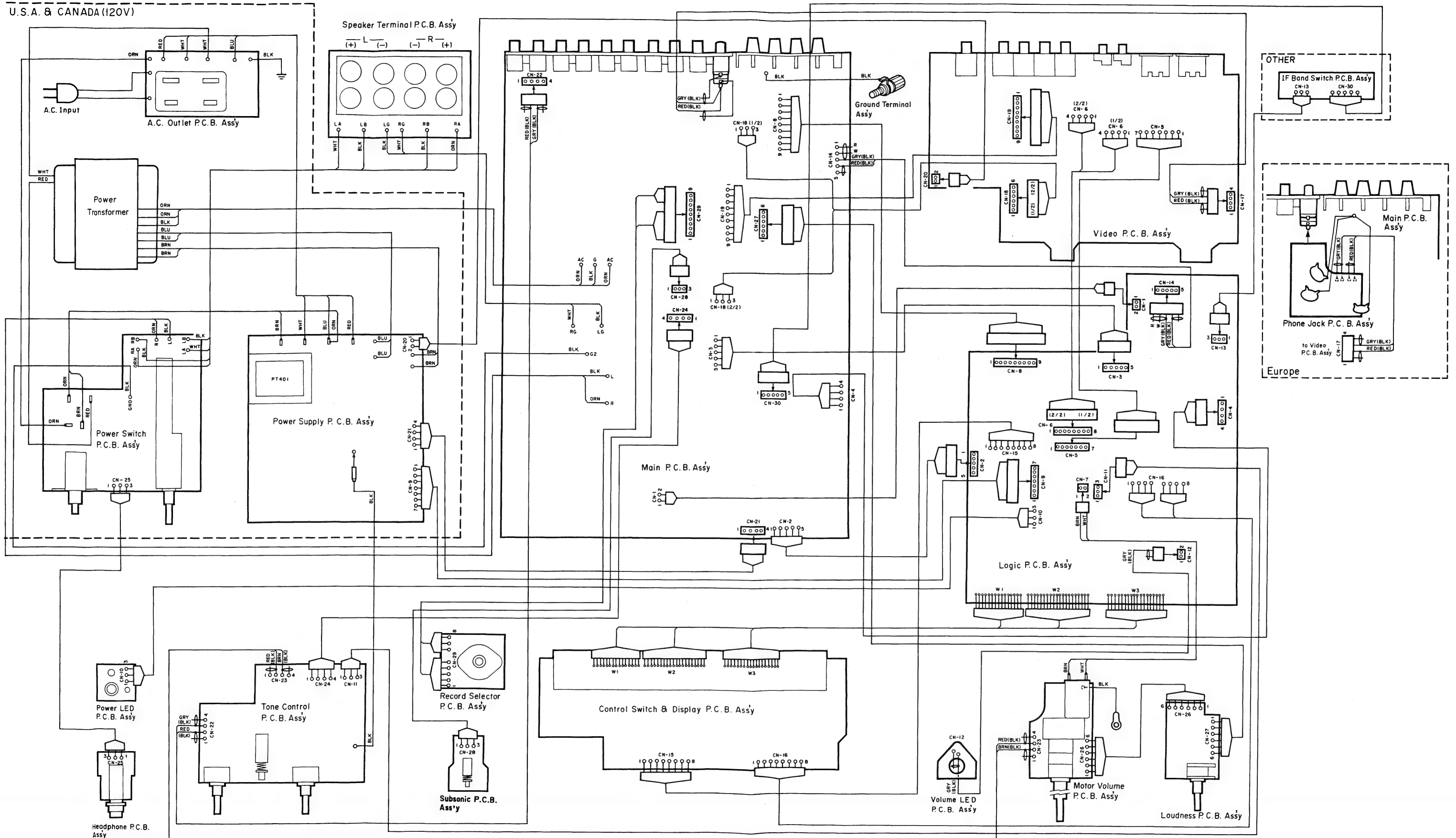


Fig. 8

9. BLOCK DIAGRAMS

9.1. Tuner Section

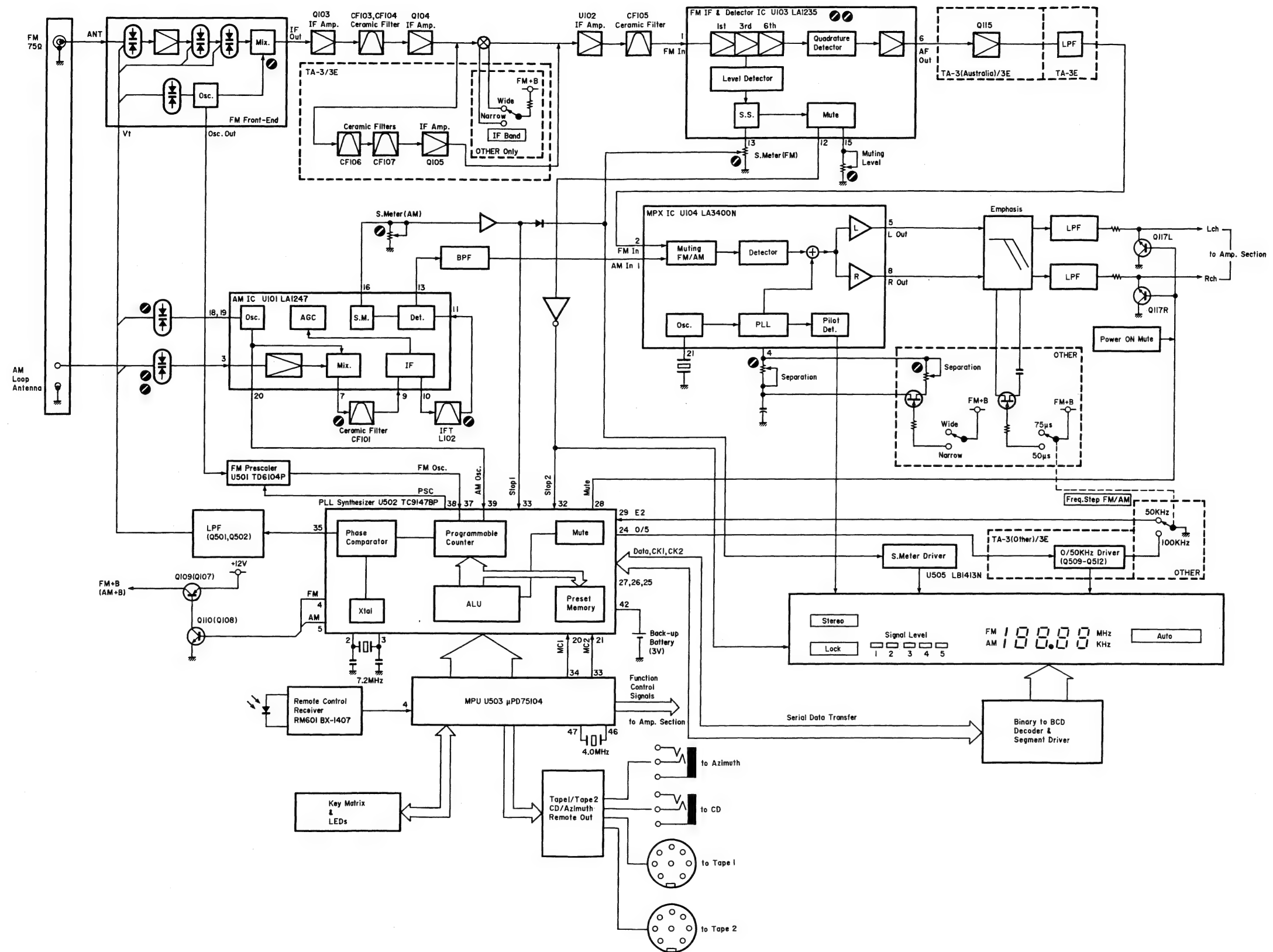


Fig. 9.1

9.2. Amplifier Section

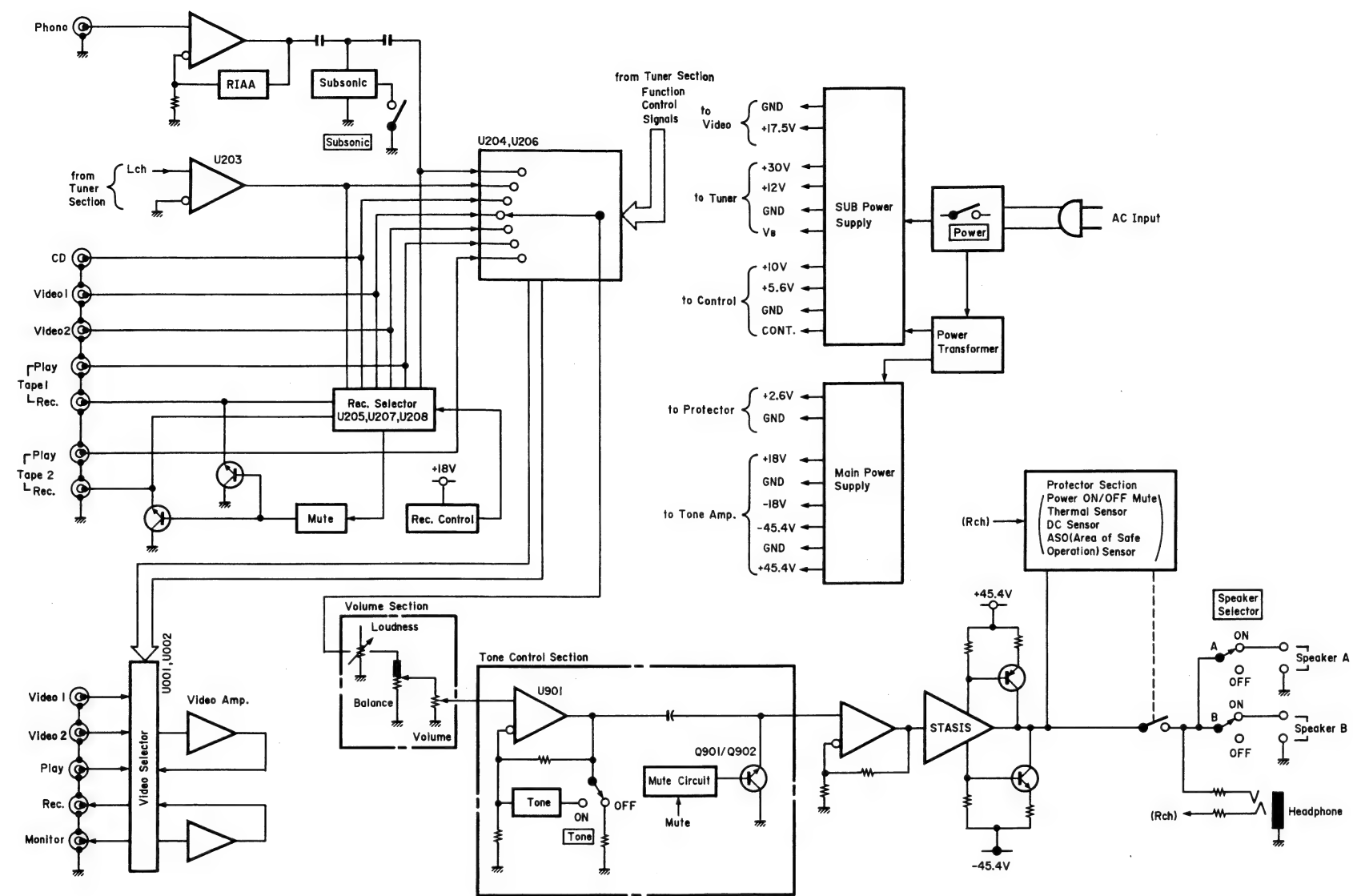


Fig. 9.2

10. SPECIFICATIONS

Power Amplifier Section

Note: Unless noted otherwise, specifications are in accordance with IHF-A-202 measured from any high-level input (CD/VIDEO/TAPE) to the speaker output.

Continuous Average Output Power	75 watts per channel into 8 ohms, both channels driven, 20–20,000 Hz, at no greater than 0.1% THD
Dynamic Output Power	100 watts per channel into 8 ohms 125 watts per channel into 4 ohms
Power Bandwidth	5–50,000 Hz 5–30,000 Hz (TA-3E)
Frequency Response	20–20,000 Hz; +0, –0.5 dB 20–20,000 Hz; +0, –1 dB (TA-3E) 5–75,000 Hz; +0, –3 dB 5–45,000 Hz; +0, –3 dB (TA-3E)
Signal to Noise Ratio (A-WTD, Input Shorted)	Better than 100 dB re Rated Power Better than 83 dB (IHF-A-202)
Total Harmonic Distortion (8 ohms, Rated Power, 20 Hz–20 kHz)	Less than 0.1%
Headphone Rated Output (40 ohms)	175 mW
Output Current Capability	18 A peak per channel

Preamplifier Section

Note: Unless noted otherwise, specifications are in accordance with IHF-A-202. Except for Sensitivity, S/N, Tone Control and Loudness characteristics (which are measured to the speaker outputs), measurements are made from the specified input to Rec. Out.

Sensitivity (for Rated Output)	
Phono MM	2.5 mV
CD/Tape/Video	150 mV
Main In	1.0 V
Sensitivity (for 1-watt output, IHF-A-202)	
Phono MM	0.29 mV
CD/Tape/Video	17 mV
Main In	115 mV
Input Impedance	
Phono MM	47 kohms
CD/Tape/Video	20 kohms
Main In	20 kohms
Maximum Input Level (1 kHz)	
Phono MM	180 mV
Pre Output Level/Impedance	1.0 V/1 kohms
Record Output Level/Impedance	150 mV/1.5 kohms
Total Harmonic Distortion (1 kHz, to Rec. Out, at 1 V)	
Phono MM	Less than 0.008%
RIAA Deviation	
Phono MM	30–20,000 Hz ± 0.5 dB
Signal to Noise Ratio (to speaker output, IHF-A-202)	
Phono MM	Better than 78 dB Better than 76 dB (TA-3E)
Tone Controls	
Bass	20 Hz, ± 10 dB
Treble	20 kHz, ± 10 dB
Variable Loudness (re maximum attenuation: –40 dB at 1 kHz)	20 Hz, +20 dB; 20 kHz, +6 dB
Subsonic Filter (Phono only)	Cutoff Frequency 20 Hz, –12 dB/octave

Tuner Section

(1) TA-3 (Other) (See Note) & TA-3A

Note: Selector switch settings for Other Model

Frequency Step FM/AM: 100 kHz/10 kHz, De-emphasis: 75 μ s, IF Band: Wide

[FM Section]

Note: All RF levels in microvolts given re 300-ohm antenna input.

Modulation: Mono 100%, Stereo Pilot 9%, Stereo Audio Signal 91%.

All measurements made at Rec. Out Jack.

Frequency Range 87.5—108.0 MHz in 100 kHz steps

IHF Usable Sensitivity 11.0 dBf/1.9 μ V

(Mono)

50-dB Quieting Sensitivity

Mono 14.7 dBf/3.0 μ V

Stereo 37.5 dBf/41.1 μ V

Signal to Noise Ratio at 65 dBf

Mono Better than 79 dB

Stereo Better than 74 dB

Muting Threshold 30 dBf/17.3 μ V

Frequency Response 20—15,000 Hz \pm 1 dB

Total Harmonic Distortion (1 kHz)

Mono Less than 0.07%

Stereo Less than 0.07%

Capture Ratio 2.0 dB

Alternate Channel Selectivity . . 55 dB (\pm 400 kHz)

Stereo Separation at 1 kHz Better than 50 dB

Spurious Response Rejection . . . Better than 90 dB

Image Rejection Better than 75 dB

IF Rejection Better than 80 dB

AM Suppression Better than 60 dB

[AM Section]

Note: Modulation — 400 Hz, 30%

Frequency Range 520—1,710 kHz in 10 kHz steps

Sensitivity 53 dB μ /m

Signal to Noise Ratio at 90 Better than 52 dB

dB μ /m

Total Harmonic Distortion Less than 0.5%

at 90 dB μ /m

Selectivity Better than 20 dB (\pm 10 kHz)

(2) TA-3 (Other) (See Note) & TA-3E

Note: Selector switch settings for Other Model

Frequency Step FM/AM: 50 kHz/9 kHz, De-emphasis: 50 μ s, IF Band: Narrow

[FM Section]

Note: All RF levels in microvolts given re 300-ohm antenna input.

Modulation: Mono 60%, Stereo Pilot 9%, Stereo Audio Signal 51%.

All measurements made at Rec. Out Jack.

Frequency Range 87.50—108.00 MHz in 50 kHz steps
IHF Usable Sensitivity (Mono) . . 11.0 dBf/1.9 μ V
50-dB Quieting Sensitivity
 Mono 23.0 dBf/7.7 μ V
 Stereo 44.0 dBf/86.8 μ V
Signal to Noise Ratio at 65 dBf
 Mono Better than 72 dB (TA-3E)/75 dB (TA-3 (Other))
 Stereo Better than 67 dB
Muting Threshold 30 dBf/17.3 μ V
Frequency Response 20—15,000 Hz \pm 1 dB
Total Harmonic Distortion (1 kHz)
 Mono Less than 0.20%
 Stereo Less than 0.25%
Capture Ratio 2.0 dB
Alternate Channel Selectivity . . 70 dB (\pm 300 kHz)
Stereo Separation at 1 kHz Better than 40 dB
Spurious Response Rejection . . . Better than 90 dB
Image Rejection Better than 75 dB
IF Rejection Better than 80 dB
AM Suppression Better than 60 dB

[AM Section]

Note: Modulation — 400 Hz, 30%

Frequency Range 522—1,611 kHz in 9 kHz steps
Sensitivity 53 dB μ /m
Signal to Noise Ratio at 90 Better than 52 dB
 dB μ /m
Total Harmonic Distortion Less than 0.5%
 at 90 dB μ /m
Selectivity Better than 20 dB (\pm 9 kHz)

General

Power Source 120, 220, 240 or 110/120/220/240 V AC, 50/60 Hz
 (According to country of sale)
Power Consumption 350 watts max.
Convenience Outlets Switched: 2 (For TA-3 (Other) & TA-3A), Switched: 1 (TA-3E)
Dimensions 430 (W) x 100 (H) x 370 (D) mm
 16-15/16 (W) x 3-15/16 (H) x 14-9/16 (D) inches
Approximate Weight 11.0 kg, 24 lbs. 4 oz.

Remote Control Unit (RM-3TA)

Principle Infrared Pulse System
Power Supply 3 V DC (1.5 V x 2)
Dimensions 64 (W) x 18 (H) x 176 (D) mm
 2-1/2 (W) x 11/16 (H) x 6-15/16 (D) inches
Approximate Weight 140 g, 5 oz. (including batteries)

- Specifications and design are subject to change for further improvement without notice.
- STASIS manufactured under license from Threshold Corporation.
- STASIS is a trademark of Threshold Corporation.

Service Information



Model TA-3/3A/3E/30 (High Definition Tuner Amplifier)

Serial No. from D10951896 -

Subject Change of Transistors

No. OOD-M-0337 (1/1)

Date 8 February 1990

1. General

1.1. Purpose

To obtain greater power margin (collector dissipation), Q208 and Q209 on the Main P.C.B. Ass'y have been changed.

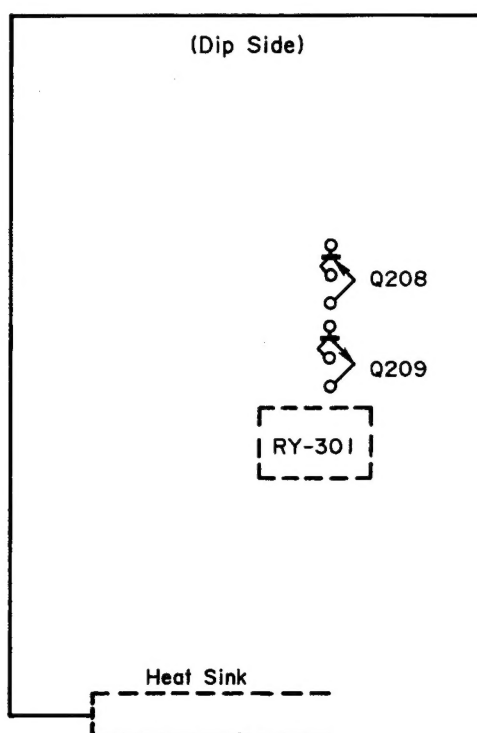
If you receive a complaint about transistor damage from your customer, we recommend you to change the damaged transistor to a new one having greater power margin.

1.2. Modification

Refer to Fig. 1.

Q208 and Q209 on the Main P.C.B. Ass'y have been changed as follows:

Ref. No.	Current Part No.	Current Description	New Part No.	New Description	Q'ty
Q208	OB06013A	TR 2SA733	OB06372A	TR 2SA953	1
Q209	OB06100A	TR 2SC945	OB06322A	TR 2SC2002	1



Note: See Fig. 6.18 (page 21) in the Service Manual.

Fig. 1 (Main P.C.B. Ass'y)

